THE BUILDER

INCORPORATING

"ARCHITECTURE" and "THE BRITISH ARCHITECT"

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THIS WEEK'S NEWS

PAGE

LARGE-SCALE models and drawings, giving a cross-section of the work of Scottish architects to meet post-war needs for schools in Scotland, have been added to the R.I.B.A. "New Schools" Exhibition which opened in the McLellan Galleries, Glasgow, yesterday. 329

THE MARS Group have prepared and forwarded to the President of the R.I.B.A. a report on Architectural Competitions, advocating certain changes in the present system. The text of the report, which has been considered by the R.I.B.A. Competitions Committee, is given. 334

MODERN trends in building materials were outlined by Dr. F. M. Lea, O.B.E., F.R.I.C., Director of Building Research, D.S.I.R., at the British Association meeting at Brighton. 335

No. 6 (New Series) of "Price Build-up To-day," by "Cain" (V. C. Abell), deals with lead pipe work. 337

MR. ERNEST MARPLES, M.P., has renewed in Mr. Bevan's own constituency of Ebbw Vale his challenge regarding the statements made by the Minister of Health concerning the number of houses completed after the 1914-18 and the late wars. 342

A SUGGESTION that light-coloured stone should be used for new buildings on main traffic routes in built-up areas was made by Mr. Charles N. Melton in a paper on "Safety-First on the Highways," read before the Annual Conference of Public Lighting Engineers. 343

IN a circular to local authorities, the Minister of Health emphasises the need for economy in the use of structural steel and draws attention to the recent revision of a British Standard Specification which curtails all unnecessary expense of steel. 344

TEAMWORK IN BUILDING

NO bigger fallacy exists to-day than to believe that an inefficient industry can be changed into a highly productive one merely by altering the machinery of ownership. Public ownership of itself can give full employment in theory only. To convert this theory into fact requires, as an essential factor, a determination on the part of all who have gained this guaranteed livelihood to make a return contribution. This contribution must be maximum production; without it full employment cannot, under any economic system, become a reality.

It is one of the greatest disappointments of the present Government that, in general, acceptance by their followers of the benefits won for them has not been accompanied by a greater determination to make good, by greater application of brain and muscle, the high cost of these benefits. This was implicit in Sir Stafford Cripps' speech to the Trades Union Congress at Margate last week, and both its truth and the warning it sounds lay now upon every industry the responsibility to find speedy and effective means of stepping up its production.

To take our own industry, Building, immense strides have been taken within the past few years to improve conditions of work and to raise wages so that operatives are now not at a disadvantage with other highly skilled industries. Decasualisation has largely been ended and the programme of work ahead should leave not a single operative in doubt of continuity of employment. It is now a matter of history almost that these benefits of themselves were not sufficient to step up building production and to lower real costs, and as a result an agreement providing for monetary incentives was made.

It is too early to judge the final result of this scheme, though it is satisfactory to note that improvement in production is being claimed for it. In our view, maximum success will only be achieved when the incentive of interest in the job as a job is recaptured, an interest which was a prime characteristic of the mediaeval Guilds. Put another way, the means can only be a real and genuine co-operation between employer and operative in which efficient builders and responsible operatives unite in one team to carry out building. This view—which was also advanced by Lord Moran, speaking on the general subject of Incentives, at Monday's meeting of the International Congress of Industrial Medicine—has long been taken by the best elements among the builders who have recently found a worthy spokesman in Mr. Burgess, the President of the London Master Builders' Association. During his year of office Mr. Burgess has taken every opportunity to make the point that building operatives, as human beings with a contribution to make, require more than monetary considerations if they are to give of their best and to step up production to an optimum level, and the reprint of some of his speeches on this subject,* now made available, could not have been better timed. Mr. Burgess sees it as an essential that co-operation between the employers and the operatives, to which all pay lip service, must be made a reality in the daily work of building. He does not try to shift the responsibility for securing this improvement on to the operatives alone. Indeed, he points out candidly that though the lot of the employee has improved immensely, yet it is unfortunate that when the operative looks back he realises that it is through his "side" fighting the employers that the improvements have taken place. He goes on:—

"Have we, as employers, established a real feeling of esprit de corps with our operatives? Do they share with us daily interest and a sense of accomplishment in the work they do? Do they feel that they already have freedom, or do they feel that they must still fight for it? What have you and I got as employers to which they have no right? These and many others are the questions we must ask ourselves if we are to lead the industry. It is our duty to make the industry an ideal way of life for the million men the result of whose labour the rest of the country enjoys. . . . We don't want our operatives to feel they are serving a life sentence. We want them to be working as a team with us, feeling that we are one, and that we are as essential as they are and that they are as responsible as we are. We want to put the accent on the accomplishment of the job as a whole, so that the laying of bricks and all the other activities become natural to those who do them in order that together they may achieve the finished product."

Mr. Burgess does not indicate any positive steps by which this sense of unity may be achieved. By many of the employers this will be criticised as a weakness. In our view he is right; he is pleading for a fresh attitude of mind, a recrudescence of the things of the spirit, and these are not to be defined in articles and paragraphs. What he asks is that a line should be drawn under the old account and a new sheet started in which masters and men shall share in a joint enterprise and a joint responsibility. Can it be said that the history of industrial relations in our industry has been so free from dispute and bitterness that it deserves to be prolonged? We commend this little book to the attention of every em-

* TWO SIDES OF ONE TEAM? By D. C. Burgess, President, L.M.B.A., 47, Bedford-square, W.C.1. Price 1s. net.

ployer and every operative as having within it the germ from which the progress, satisfaction and happiness of our industry may grow.

BUILDING AND SOCIETY

A USEFUL booklet about the building industry—its past, its opportunities as a career, its educational facilities, its organisation, the joint negotiating machinery, and its problems, particularly in relation to housing and employment, together with much incidental information in the form of facts and figures—has just been issued under the title of "Man the Builder," by Messrs. Richard Coppock and Harry Heumann,* with a foreword by Mr. Harold Wilson, M.P., President of the Board of Trade. It is clearly intended for the layman, and apart from its usefulness as a guide to the uninitiated, it may be construed as a little discreet propaganda for the nationalisation of the building industry, a policy which has for some time past been advocated by some sections of the organised operatives, or at least fuller control.

The booklet is admitted to have been "prepared while the Second World War was still on," which no doubt accounts for its being somewhat out of date in certain respects. For example, although it contains a passing reference to the White Paper on Capital Investment, 1948, it retains the statement that "building is one of our great stable and staple industries, and gains particular importance by reason of its being a home industry not relying, or relying but little, on the export trade and being almost unaffected by the vicissitudes of external trade." If this is so, then our authors should clearly bring their influence to bear on Sir Stafford Cripps.

Stress is laid on the need to organise the industry as a "social service" and on its being made to "serve public interest." Now while some sort of case can be made out for housing as a social service, it is difficult to see why the industry should be made one. After all, the Labour Government itself has decided that no more than about one quarter of industry shall be nationalised, the remaining three-quarters being left to private enterprise, which is just as well if the present results of nationalisation are any clue to efficiency. Nor is it easy to generalise safely about "public interest" because so large a measure of public interest is served, and served efficiently, by private enterprise.

If it is claimed that full employment is dependent on nationalisation (and that is a conclusion that can be drawn from chapter 6), then we are again driven back on the general economic situation of the country and the need for a great export trade, for without this, in view of the loss of income from overseas investments and our dependence on food and raw materials from abroad, it appears to be inevitable that building must be curtailed in some measure in certain directions. That there is a case for Government action during times of slump, particularly in the matter of public works which will help to improve industrial efficiency, few people would nowadays wish to deny. If the Lloyd George policy of public works, so strongly advocated about twenty years ago, had been adopted instead of allowing workers to remain idle on the dole, we should not now be labouring at great expense and heavy cost in manpower to make good our deficiencies in generating stations, hydro-electric plants, reservoirs, etc., to say nothing of our arrears in new roads, bridges and slum clearance. Government action of this kind, however, can be taken without controlling the building industry.

The booklet is certainly a stimulating one and raises many controversial points, only a few of which can be dealt with here. The authors quote, presumably with approval, a statement by Thorold Rogers to the effect that "contractor's profit, architect's commission and middlemen's advantage" involved "enormous waste" in a certain instance. Anything can be proved by figures, but not even the operatives would wish to deny that the labourer is worthy of his hire. While services are rendered they should be paid for adequately, and the architectural profession least of all is not likely to regard its service as "waste."

In a reference to the certification scheme of the National House-Builders' Registration Council the authors state that "the standards to which conformity is necessary are far from satisfactory . . . It is therefore essential that the Government itself, in its plans for housing, lay down higher housing standards, to which all builders should imperatively conform as a minimum requirement." The registration standards were set reasonably high, and were certainly a great improvement on those of the pre-war private house-builder. We should doubt whether those of current local authority house-building are higher, if generally as high. In any case, this question of standards is finally a matter of economics. We cannot afford more than we can pay for.

Kipling has a verse commenting on the small extent to which "since things were made, things have altered in the building trade." Our authors quote Postgate's "Builders' History" as follows: "If to-day (1923) a competent member of the National Association of Operative Plasterers were to meet an ancient Egyptian worker who used (certain) tools, he might not understand his language, but could work with him all day till sundown without suspecting that four thousand years lay between them." In this conservatism we perhaps find the clue to much that needs reform in the building industry. Building, if it is to give of its best, must keep pace with technical advances and adjust itself to the conditions of a changing world. Higher wages, more leisure and improved conditions are ultimately dependent upon increased production, which is more than ever a vital necessity when Capital Investment is controlled by the State as it is to-day. Reliance upon the State for our welfare will become more and more a habit with increasing State control. Every one of us, therefore, will need to say *L'Etat c'est moi.*

We should not like it to be thought that this booklet is no more than a political pamphlet. It is full of interest for any serious student of the building industry, though slightly tendentious.

* London: St. Botolph Publishing Co., Ltd., price 2s. 6d.

"BUILDING A TRUSS," an exhibit by K. O. Hruby, in the Pictorial Section of the 93rd annual exhibition of the Royal Photographic Society of Great Britain, which opened in London on September 10. (*See note on facing page.*)

NOTES AND NEWS

Lambeth's Civic Week.

LAMBETH is chiefly thought of in four connections: (1) as the home of the Archbishop of Canterbury, (2) the inspiration of a song which a few years ago swept round the world, (3) the birthplace of Field-Marshal the Viscount Montgomery of Alamein and Charlie Chaplin, and (4) the home of Surrey cricket. These distinctions should be enough for any borough of no more than four thousand acres, but Lambeth has not only famous associations and a past (it was a recognisable community when Domesday Book was compiled), it has a very active and vigorous present and a notable civic pride. We hear that in connection with its Civic Week, which is to be held from September 18 to 26, an "Our Lambeth" exhibition is to be held at the Town Hall, which the Minister of Health will open. It has been designed "to tell a continuous and integrated story of the social and physical growth of the borough, including the work of the Council and other social services." The design of the exhibition has been carried out by the Art Department of the Brixton School of Building, and we hear of a remarkable mural painting, 40 ft. long, showing the evolution of much of Lambeth during the nineteenth century. Other features deal with town planning and housing, communications and services, physical recreation, education, road safety etc. Many voluntary local organisations are staging their own displays in different parts of the borough. A very stimulating week is promised for all who are interested in civic affairs and we expect that not only the burgesses but many visitors will be doing a civic version of "The Lambeth Walk."

Two Czech Visitors.

UNDISGUISED praise for the part British architects are playing in this country's school construction programme is voiced by Karel J. Lavoutka and Stanislav Maran, two Czechoslovakian visitors. Both are members of the Comenius Institute, Prague, an organisation which grew out of the Czechoslovakian underground movement during the war. During the German occupation most school buildings were taken over as barracks, stores and other military establishments. Working under cover, members of the Comenius Institute carried out a country-wide survey and research into post-war educational needs, including requirements for new school buildings, with the result that when liberation came a comprehensive programme was ready to be put into operation.

The work of the Institute is divided into five sections dealing with sociological and psychological problems, school statistics, didactics (including methods of teaching and the preparation of school curricula), technical or basic vocational training school problems, and school planning. Mr. Lavoutka is chief of the last-named department and Mr. Maran is interested in the development of technical schools. The Institute works on parallel lines with the Czech Ministry of Education, but the latter concerns itself only with administration matters, while the Institute directly handles construction projects. A two-year programme of construction which ends in 1949 aims at the erection of 175 new schools. Many obstacles have had to be overcome but it is confidently anticipated that at least 60 per cent of the programme will be realised by the end of next year. Long-term policy embraces the construction of 3,500 schools in the next 40 years at an estimated cost of £250m.

Schools: "Great Britain in the Lead."

THIS week, at the Royal Institute of British Architects, Mr. Lavoutka and Mr. Maran evinced deep interest in Great Britain's current school-building projects, many of which figured in the Schools Exhibition held at the R.I.B.A. earlier this year. "You seem to be putting into effect all the principles of school construction which we are struggling to get adopted in our country," they said. "British architects have realised that the classrooms are not necessarily the most important units of accommodation which the modern school should offer. Assembly halls, facilities for school meals, gymnasia and ample storage rooms adjoining classrooms are just as essential."

Mr. Lavoutka, member of the Union of Architects in Prague, added, "I have travelled extensively in France and Switzerland and am familiar with the latest Scandinavian work, but Great Britain is far in advance in the matter of school planning and construction."

Future plans for Czech schools include the provision of flats for teaching staffs, to be built close to the school buildings. The flats will each have three rooms, a kitchen and bathroom.

No official architects are engaged on Czechoslovakian school work. It is all handled by architects in private practice, who submit plans to the Institute for approval. In no case has construction work been held up because plans have not been ready.

Joint Memorial Service.

A JOINT MEMORIAL SERVICE has been arranged for the late Mr. Christopher David George Nicholson, M.A., F.R.I.B.A., and the late Mr. Donald Findlay Greig, A.F.C., who recently lost their lives whilst competing in the International Gliding Competitions in Switzerland. The service will be held at Christ Church, Down-street, W.1, at 12 noon on Friday, September 24.

Royal Photographic Society's Exhibition.

ARCHITECTURAL and building subjects are somewhat more prominent than in recent years at the 93rd annual exhibition of the Royal Photographic Society of Great Britain which opened at 16, Princes-gate, S.W.7, on September 10. For some reason, doubtless due to restricted hanging space, the Society finds it necessary to divide the exhibition into two parts. Part I (now open) deals with pictorial photography in monochrome and colour, lantern slides, colour transparencies and stereoscopic photography. Part II, which opens on October 9, embraces Nature photography, record, Press and commercial exhibits, scientific photography and the kinematograph section, the latter including a sound documentary of the Royal Silver Wedding, submitted by J. S. Frieze.

The pictorial section generally clearly illustrates how far photography has advanced from the realm of science to that of art. A bromoil transfer "Big Ben, January," by R. H. Marsh, A.R.P.S., provides a good example of this. Here is a subject, a middle distance view of Big Ben from the western end of Bridge-street, with which most are familiar. By a successful choice of media and commendable artistry Mr. Marsh has produced a picture of great merit. Here and there a carefully chosen caption gives added interest to an exhibit, as in the case of "The Giant Breathes," a bromide by Leo. A. Lyons depicting a group of industrial buildings with smoke belching from the stacks.

"These Things Endure," a plastika by H. A. Williams, A.R.P.S., is a charming composition of traditional houses of the type which abound in Oxfordshire, while "The Crypt, Piscina" (plastika), by Anthony Peacock, F.R.P.S., exemplifies this photographer's skill in such subjects.

The poetry of the daily working scene is well illustrated in "Building a Truss" (bromide) submitted by K. O. Hruby, an exhilarating picture taken from a carefully chosen angle (shown on facing page).

Professional Announcement.

MR. DEREK BRIDGWATER, B.Arch., F.R.I.B.A., has taken into partnership MR. PETER SHEPHEARD, B.Arch., A.R.I.B.A., A.M.T.P.I., who has resigned from his post of deputy chief architect to the Stevenage Development Corporation and from the Ministry of Town and Country Planning. They will practise in architecture, town planning and landscape architecture under the name of Bridgwater and Shepheard. The address will remain 42, Bruton-place, Berkeley-square, W.1. (Tel.: Mayfair 6391-2).

COMING EVENTS

Friday, September 17.

TOWN AND COUNTRY PLANNING ASSOCIATION AND THE HOUSING CENTRE.—Course in Home and Town Planning. Ashridge, Berkhamsted, Herts. Continuing until September 20.

Tuesday, September 21.

THE INSTITUTE OF PETROLEUM AND THE INSTITUTE OF FUEL.—Joint Conference on "Modern Application of Liquid Fuels." University of Birmingham, Edgbaston. 11.30 a.m. Continuing until September 23.

INSTITUTION OF CIVIL ENGINEERS.—Conference on "Biology and Civil Engineering." The Institution, 1-7, Great George-st., S.W.1 (until September 23).

THE INSTITUTION OF SANITARY ENGINEERS.—R. C. Blyth, M.A., A.M.I.C.E., on "Design and Control of Concrete Mixes." Caxton Hall, S.W.1. 6 p.m.

Wednesday, September 22.

BRITISH BROADCASTING CORPORATION (THIRD PROGRAMME).—New Talks series, "Buildings and Places." Mr. Alec Clifton-Taylor on "The Churches of the Norfolk Marshland." 7.25 p.m.

Friday, September 24.

LONDON BUILDERS' FOREMEN'S ASSOCIATION.—Annual and Ladies' Night Dinner and Dance. Connaught Rooms, Great Queen-st., W.C.2. 6 p.m.

FROM "THE BUILDER" OF 1848

Saturday, September 16, 1848.

CHINESE CARVING.—The means by which the concentric balls which come from China can be carved, one within the other, have long been a matter of dispute. No join is to be discovered, but a recent traveller states positively that each ball is constructed of two pieces, the edges of which are so finely scraped down that the edge of one hemisphere is made to overlap its counterpart with the greatest nicety. Thus one ball is easily enclosed within another. The joinings are then united by a peculiarly strong cement, aided by the employment of steam and pressure. He says that anyone who wishes to make the expensive trial will soon ascertain the fact by applying a very powerful heat to one of these balls, which will open at the joints in due time.

BRITISH COLONIAL ARCHITECTURE

9.—New Zealand

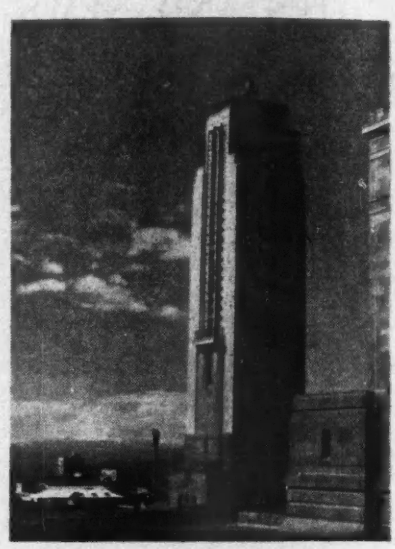
By MARTIN S. BRIGGS, F.R.I.B.A.

NEW ZEALAND prides itself upon being the most British of all our colonies, with 90 per cent. of its people of British descent, and claims to follow the British way of life more closely than any other of its partners in the Commonwealth, though some recent writers have suggested that it is our grandfathers' way of life that New Zealand prefers to our own, for its citizens—in spite of a Labour Government—are conservative in some ways, as will appear later in this article.

The centenary of the foundation of the colony was celebrated in 1940; but, two hundred years before the British flag was formally hoisted in New Zealand, the islands had been known to Europe, and may conceivably have been visited by Juan Fernandez earlier still in 1592. At any rate, the Dutch voyager Captain Abel Tasman certainly cruised along the western coasts of the islands in 1642 in his search for a southern continent, and then sailed away again, but left New Zealand its present name. Thereafter, for a century and a quarter, Europeans left it alone, until Captain Cook, whose voyage to Australia was mentioned in a previous article,* landed on the east coast of the North Island in 1769. After circumnavigating the two islands, he took possession of them in the name of King George III. Returning home, he suggested that they should be colonised, but the British Government rejected his proposal and nothing was done. Nevertheless, the Bay of Islands, north of modern Auckland, soon became a regular port of call for whalers of several nations, including the British, who traded with the natives and supplied them with metal tools and weapons. An enterprising clergyman in Sydney, concerned with the evil effects of white civilisation upon the Maoris, established a mission-station in the Bay of Islands, purchasing 200 acres of land for a dozen axes, and conveying this land to the C.M.S. Thus Christianity penetrated New Zealand at the moment when its artistically gifted inhabitants were being "elevated" from the Stone Age in which they had previously lived.

Unlike the brutish aborigines of Australia, who lived in crude lairs and had no skill in the crafts, the Maoris were accomplished carvers and tolerable builders long before the British arrived. Anthropologists differ about their ultimate origin, but on the whole consider that they are of the Caucasian stock, that they had reached Tahiti via the Indian Ocean and Indonesia some 1,500 years ago and discovered New Zealand *c.* 900 A.D., led from island to island by following the flight of migrating birds. Some authorities regard this last theory as absurd, but the astounding fact of the Polynesians' voyages, without a compass, remains unexplained. Organised migration to New Zealand is thought to have taken place *c.* 1250 in great carved canoes 120 ft. long, and the tradition of carving canoes decoratively is still maintained. The Maoris lived in fortified villages, each village having an elaborately decorated meeting-house facing an open square where formal ceremonies and dances took place, surrounded by the thatched timber huts of the villagers.

Although skill in carving was common among Polynesian peoples, the Maoris were outstanding in this craft, whether applied to canoes, weapons, domestic objects or buildings, and they freely inlayed wood carvings with a gleaming *paua* shell not unlike mother-of-pearl. Ornamental forms were almost always conventional rather than naturalistic, geometrical forms being mainly used in both carving and painting, but in later work more naturalistic patterns, including vines and tendrils, are sometimes found painted on rafters. Where the human form is represented, it is generally grotesque, as in the extraordinary figures of carved gods on the roofs, supposed to ward off evil spirits. Occassionally, animal forms are introduced—e.g., a bird grappling a snake at each end of a door-lintel. All this decorative work is very delicate, but tends to be over-elaborated, the artists having little sense of restraint.

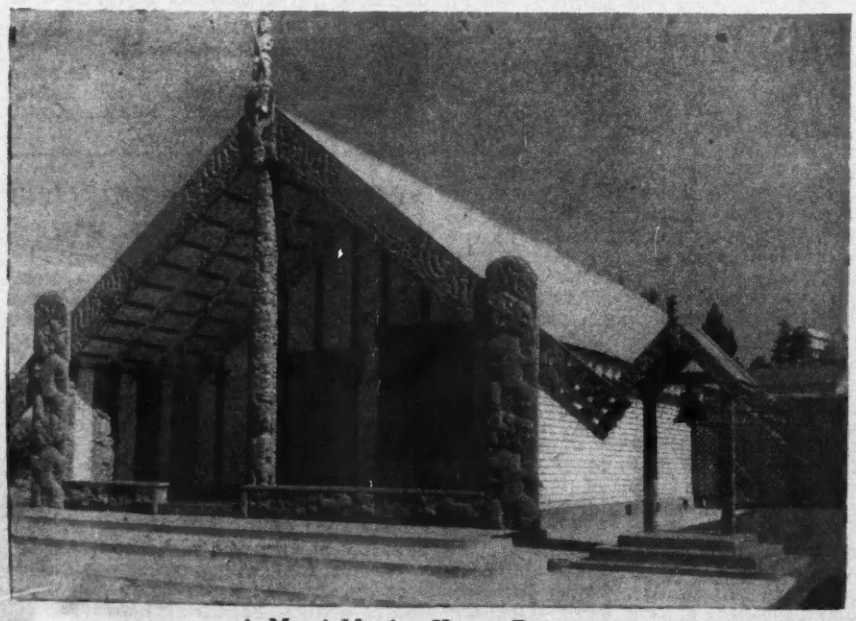


War Memorial Carillon, Wellington. (Unveiled 1932.)

The planning and construction of Maori houses, if primitive, was far ahead of that of Kaffir kraals. They were invariably oblong in shape with low walls and large roofs. The framework was of durable totara wood, the internal lining of reeds and the exterior covering of dried rushes. At one end, facing the sun, was a veranda, on to which opened a single door and a small window. The sunk floor was of rammed earth, and there was no chimney. The thatched roof was carried on a network of sticks supported on rafters, often richly painted. If the ridge was low, a central supporting post was introduced to shorten the span. The interior was kept clean according to native standards, but surviving houses of this type are found unendurably dark and stuffy by Western visitors. Besides the carved posts and beams, and the painted rafters already mentioned, the reed lining of the interior was often painted. The colours mainly favoured by Maori artists were blacks, yellows and reds. All the tools used before the British arrived were of stone, adzes being employed for woodworking. Carving was generally done with greenstone chisels and gouges, without a mallet. In spite of all this skill in craftsmanship and construction, the plan was always limited to a single room, and the tribal meeting-halls, though larger, had only a single door and window. The number of authenticated old Maori buildings is small, and many of those produced during the vigorous renaissance of the native tradition which began a generation or so ago, after the Maoris had attained complete equality with the British, are inferior artistically to their original prototypes.

While English and French traders and missionaries were competing in New Zealand during the second quarter of the nineteenth century, the "New Zealand Company" was being hatched in England by Edward Gibbon Wakefield, who believed in organised colonisation. He urged the Government to allow his company (established in 1839) to buy land wholesale and retail it at a high price to English capitalists, half the profits of the retail sales being devoted to the importation of English labourers and women. While, as one historian relates,

* No. 8 in this series, "Australia," was published on October 17, 1947.



A Maori Meeting House, Rotorua.

"the English Government were still trying hard to do nothing," his brother, Colonel W. Wakefield, "softly and silently stole away from England and sailed for Cook Strait; and while he was on the sea, and before he had bought an inch of land, 1,000 colonists started in his wake to buy from him the land which he had not bought." His proceedings on arrival read like a passage from comic opera. Knowing how the Maoris thirsted for guns, he purchased —or thought that he had purchased— over 30,000 square miles of land from some of their chiefs for a shipload of goods valued at £9,000, and containing not only guns and tools but also *inter alia* 60 red night-caps, 480 pocket-handkerchiefs, 144 Jews' harps, 12 shaving-brushes and 12 sticks of sealing wax. "The Colonel thought that he had bought a few million acres; the natives thought that they had sold a few thousand acres round Nelson." The British Government appointed an arbitrator who, in 1845, after long haggling, reduced Wakefield's purchases to 500 square miles.

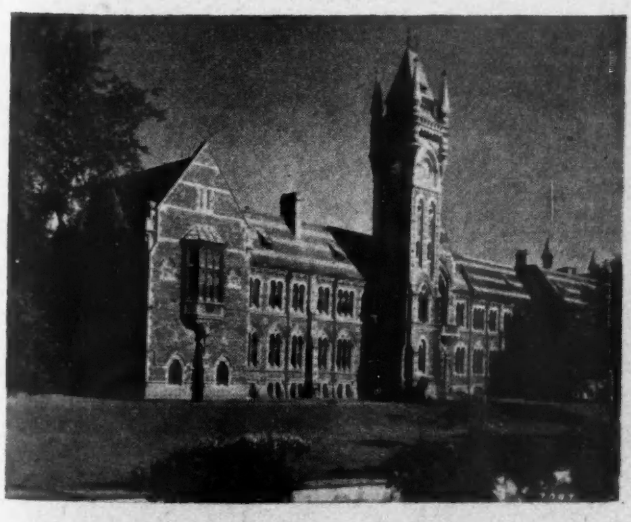
When his thousand colonists arrived in 1840, they naturally met with a somewhat lukewarm welcome, and camped on the least unfriendly beaches at Port Nicholson (where they afterwards built Wellington) and at Nelson, both on Cook Strait. They were probably above the average colonists, having been picked by the Company as suitable. The houses that they built in their first years were of the most rudimentary type, either of wood or of clay in the form of cob or of sun-dried bricks. As the colonists gradually established settled conditions, use was made of the rich resources of natural building materials ready to hand: particularly the fine Oamaru limestone, resembling Bath stone in quality; and a great variety of suitable timber, including kauri, totara, kahikatea, rimu, and matai—all conifers. For building, rimu was most favoured. Wooden houses had the advantage of resisting earthquakes.

The site of Wellington was happily chosen, Port Nicholson forming a splendid natural harbour, and the plain by the water-side, encircled by hills, has since been enlarged by the reclaiming of part of the foreshore. Auckland was founded in the following year (1841) as the capital of the new colony by a Government expedition in charge of Captain Hobson, who selected a site in the North Island, about 300 miles from Col. Wakefield's settlers at Wellington, and well away from the missionaries, who by this time, it may be noted, had converted most of the Maoris to Christianity. In some ways, scenically for one, he made an excellent choice, and Auckland is now much the largest city in New Zealand; but administratively it was a mistake, and in 1865 the seat of the government was transferred to Wellington, situated in the very centre of the islands.

Maori Meeting House of modern construction, Katti, Gisborne.

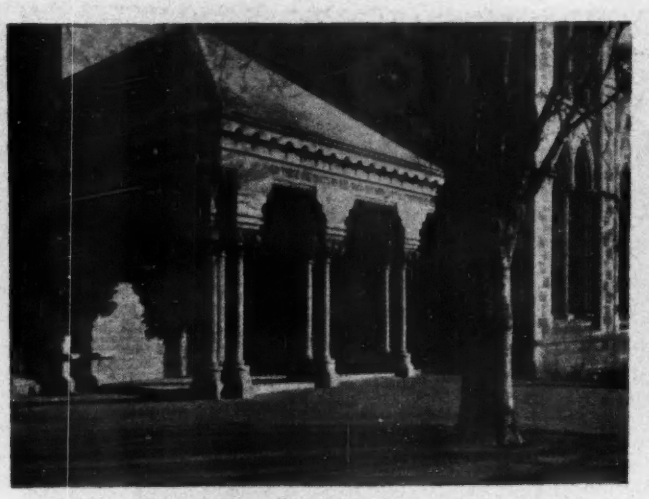
The third notable incursion of colonists landed in the south part of the then sparsely inhabited South Island, and was a Scottish venture in 1848, resulting from a disruption of the Presbyterian church in Scotland. Like their leaders, a Peninsular veteran and a minister, the 326 settlers were actuated by the same sort of Puritan fervour that inspired the Pilgrim Fathers of New England, and they encountered somewhat similar hardships on landing, but no native opposition. They named their new town Dunedin, its harbour Port Chalmers, and its little river "The Water of Leith." Some critics consider Dunedin to be still obstinately Scottish in appearance, one has even dubbed it "a sort of antipodean Auld Reekie," but its dour aspect was much altered as a result of the gold rush of 1861, which made it cosmopolitan.

In 1850, an energetic counterblast to this heretical venture was launched by the Church of England, which despatched a band of self-styled "Canterbury Pilgrims" to found a definitely "English and Episcopalian settlement" in the South Island. They carried out their pious project with a result that was patently English and aggressively Anglican. Their principal buildings recall Sir Gilbert Scott, Victorian Oxford, and the Old School Tie. All the first streets in the new city of Christchurch (named after the leader's own college at Oxford), though planned chessboard fashion, bore the name of English Bishoprics; and its boys' school, as one writer observes, "in its quiet haphazard growth round a



Otago University College, Dunedin.

A Maori Church. Rafter patterns of Maori design.

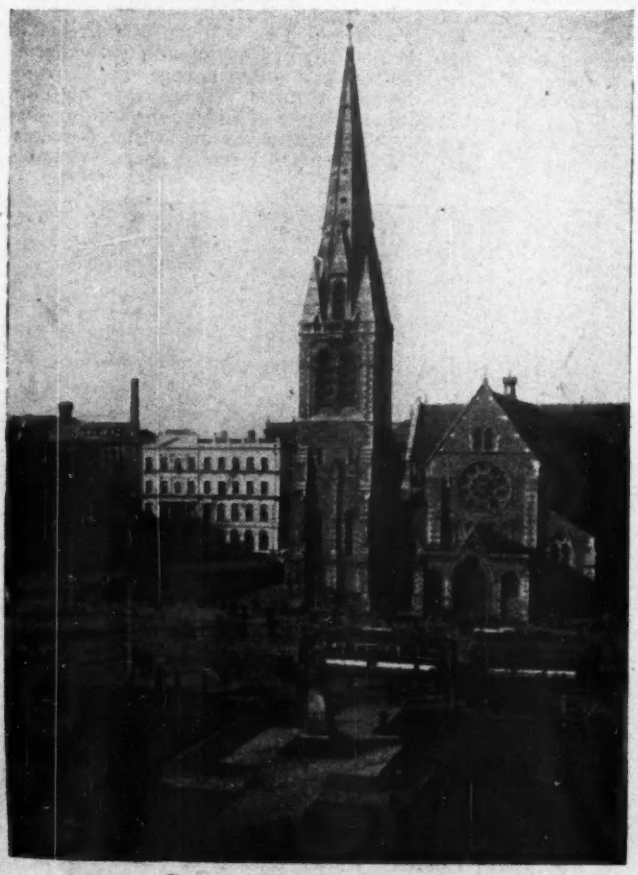


Entrance to Canterbury Museum, Christchurch.

The Railway Station, Wellington.

quadrangle has acquired a patina of character and a charming, if precipitant, air of antiquity." This remote example of the power of the Gothic Revival did not mature immediately, and one of the earliest buildings of the new community, the Bank of New Zealand, designed by W. B. Armson in the early sixties, is a staid classic structure. The series of neo-Gothic buildings began with the Cathedral, for which Sir Gilbert Scott supplied plans in 1864. It stands at the heart of the gridiron layout in a spacious square, and its prominent spire dominates the whole city. It is in the "Geometrical Decorated" style beloved of its famous author; and is, as one might expect from him, thoroughly conventional, competent and unimaginative. The effect of the interior has not been improved by the addition of a massive choir-screen. Construction, which was slow, was supervised at first by Edward Speechley, then by B. W. Mountfort, who died in 1894, and finally completed in 1921 by his son.

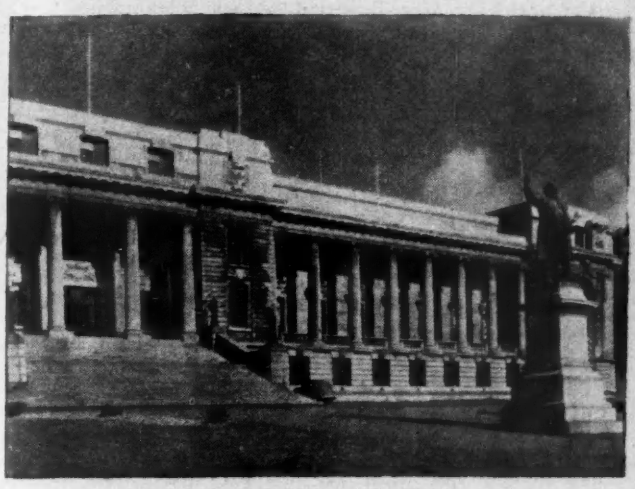
Mountfort the elder, one of the original founders of Christchurch, had been trained in Scott's office in London. The city owes to him all its most cherished neo-Gothic buildings. Of these the most admired, it seems, is the Provincial Council Chamber completed between 1859 and 1865—an example of unrestrained polychromy applied to the mid-Gothic or Gilbertian style. Even in these days of changed taste, the official guide-book to Christchurch hails it as "an architectural masterpiece. . .treasured as a memorial of the founders of the province. . . . It is hoped some day to have it set aside completely as a national monument and pioneers' museum." Thus local opinion has not altered much since the previous issue of the same publication, which included this "poem in stone" among "designs which enchant the eye." The Canterbury Museum, opened in 1870, is another of Mountfort's works, and its entrance porch is described in the guide-book as "a fine example of stonework embellished with carvings of great beauty," though it is, in fact, a typical example of mediocre Victorian Gothic. The original buildings of Canterbury College, now forming part of the University of New Zealand, were completed from Mountfort's designs in 1877 and are in the same heavy style. He also built the Public Library in 1862. Christ's College, a rambling boys' school, is a very English neo-Gothic design by J. E. Fitzgerald. The passages quoted above show that conservatism in matters of architectural taste still prevails in some quarters: other evidence will be mentioned shortly. Gothic remained in favour during the rest of the nineteenth century for most churches and many educational buildings. Among the latter may be cited the three University Colleges at Dunedin (founded 1869), Wellington and Auckland—mainly based on the traditional late-Gothic or Tudor types of Oxford and Cambridge.



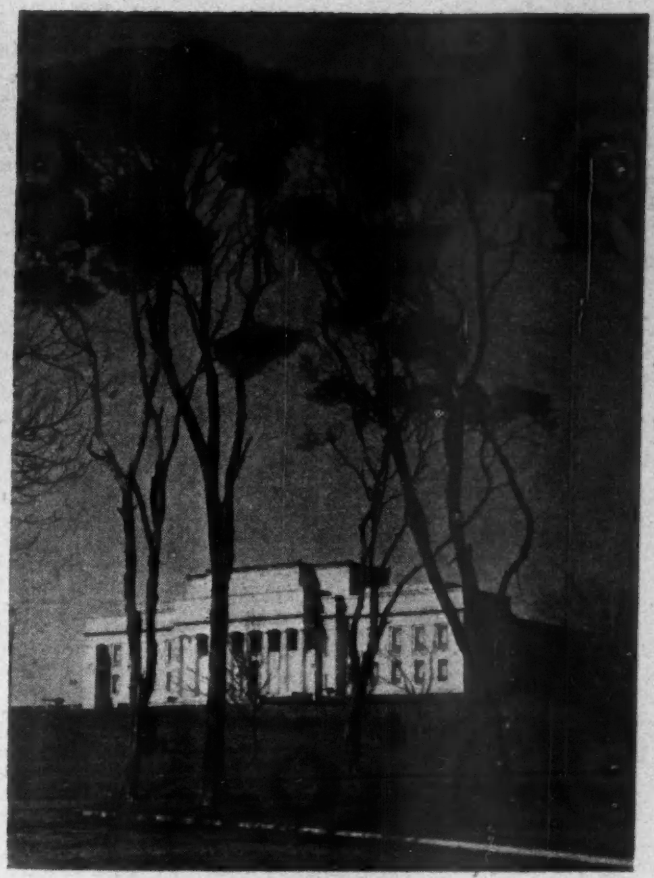
Cathedral Square, Christchurch.

For town halls and other civic buildings, some form of revived classic architecture was preferred: thus the Public Library and Art Gallery (1887) at Auckland recall the French Renaissance; and the Town Halls of Wellington and Auckland reflect exactly the English idea of appropriate architecture for such buildings at the turn of the century. The old Government Buildings in Wellington, completed in 1877 and four storeys high, are described as the largest timber edifice of the kind in the world, conventionally classical in design with an enormous Italian cornice. Besides these definitely neo-Gothic and neo-Classic designs, there are others less easily catalogued, such as the half-timbered Bath Buildings at Rotorua in the style of Compton Wynyates, the florid and presumably Edwardian railway-station at Dunedin, and the great Roman Catholic "Basilica" at Christchurch: in fact New Zealand, just before 1914, could show a heterogeneous display of almost every kind of revived architecture that marked the century of revivals in England, and she could show very little that was distinctive. The earliest buildings of the settlers had been simple and unpretentious, lacking all stylistic features, and it seemed at one stage that a definite vernacular style might emerge, but the lure of the revivals proved too seductive.

From 1860 to 1871, the sporadic guerilla skirmishes with the Maoris, that had continued ever since 1840, developed into open war; but since 1871, relations between the two races have been notably friendly, and to-day, the Maoris, who form about 6 per cent. of the total population, have obtained complete equality with the British-born inhabitants and have even freely intermarried with them. In 1911, the Acting Prime Minister, Sir James Carroll (son of an Irish father and a Maori mother) adopted as his slogan: "Hold fast to your Maorihood." Social and political freedom naturally led to a revival of interest in Maori art some twenty years ago, resulting in the building of community-houses in the traditional style described earlier in this chapter; but,



The Parliament Buildings, Wellington.



Memorial Museum, Auckland.

considering how rudimentary is the plan of Maori dwelling-houses, it is evident that only their ornamental features could be utilised as models if an attempt were made to devise a distinctive New Zealand style based on the pre-British tradition, on the analogy of Louis Sullivan's attempt in 1893 to invent an American idiom in his Transportation Building at the World's Columbian Exposition.

During the present century, New Zealand has continued to follow English fashions, mainly "traditional," for domestic as well as for public, ecclesiastical and educational buildings, and nothing very novel resulted between the two World Wars. The country has suffered most of the evils that are only too familiar in England—a spate of speculative builders' villas and bungalows, ribbon building, and all the other attributes of uncontrolled development—for town planning is of very recent growth. When the first conference on town planning was opened at Wellington in 1919, it was overdue. New Zealand was beginning to display some of the least desirable aspects of American life, with half-baked towns, clusters of shacks roofed with corrugated iron, and shoddy streets punctuated with cinemas. On the other hand, there was a marked improvement in the design of public buildings just before the First World War, perhaps due in part to the formation in 1905 of the New Zealand Institute of Architects and to the parallel improvement in architectural education, culminating in the establishment of a University School. The competition for new Parliament Buildings in Wellington was won in 1911 by Campbell and Paton, and the imposing pile that resulted a few years later (illustrated here) is a typical example of "free classic" design on the grand scale. Much less ornate in character, as befitted its purpose, is the William Booth Memorial College at Wellington by Fearn and Quick, erected in 1913—the first building to receive the N.Z.I.A. Gold Medal instituted in 1927; in the following year the award went to Gummer and Ford for their Remuera Library at Auckland. Both these are sober classic designs. More imposing and, indeed, monumental, in the best Beaux Arts tradition, is the splendid War Memorial Museum at Auckland, won in competition by Grierson, Aimer and Draffin in 1922, which received the Gold Medal in 1929. A sober block of flats in Wellesley-street, Auckland, obtained the award in 1930; and in 1931 the Gold Medal was given to Gummer and Ford for their new railway station at Auckland. The dignified exterior is supposed to show signs of American influence. A similar criticism, not by any means unfavourable, may be made of the new station at Wellington by Gray, Young and Partners (1937), which has a neo-Classic exterior and a simple interior with reinforced concrete trusses. The same firm were awarded the Gold Medal in 1932 for their Wellesley Club at Wellington. Among churches, St. Mary of the Angels, at Wellington, by Clere and Williams (1922) is an elaborate Gothic design of orthodox type. A competition for a new cathedral at Auckland was won in 1941 by Charles Towle, of Sydney, and a new cathedral for Wellington is also projected. To the list of public buildings already mentioned may be added the new Public Library at Wellington, won in competition by Cecil Wood in 1935; the new Training College at Dunedin by Clifford Muir; the McDougall Art Gallery at Christchurch by E. W. Armstrong; the Post Office at Christchurch by Cecil Wood, 1941; and the imposing new Green Lane Hospital at Auckland by R. L. Farrell, with its long balconies giving a more "modern" appearance to this building than the others mentioned can claim, for most of them are unashamedly and pardonably classic.

Dixon-street State Flats, Wellington.

The following are outstanding among many important new commercial buildings: the new Bus Station at Dunedin by Miller and White, 1940; Tylers' remodelled warehouse at Auckland by F. L. Moodie, 1939; the Public Trust Offices, the Municipal Electricity Buildings and Millers' Store (by G. A. J. Hart, 1940)—all at Christchurch; the State Fire Insurance Buildings at Christchurch (by C. W. Wood) and at Wellington (by Gummer and Ford); the splendid 8-storey block of Government offices in Stout-street (1939).

the D.I.C. Building on Lambton Quay, the Dominion Newspaper Building, Levy Buildings, and Wakefield Chambers—all at Wellington. The striking group of buildings at Wellington for the New Zealand Centenary Exhibition in 1940 were designed by E. Anscombe, and the War Memorial Carillon at Wellington (1932) (see page 324), by Gummer and Ford. There are two notable war memorials at Christchurch: the Soldiers' Memorial in Cathedral Square by W. T. Trethewey, and the Bridge of Remembrance by Gummer and Ford.

In State housing, there has been a tremendous boom since the Labour Government came into power in 1935, and took it in hand seriously in 1937. Up to the end of 1945, 25,000 houses and flats rented at 20s. to 35s. a week had been completed in spite of war difficulties, besides 3,000 houses for Maori settlers; and present plans envisage the provision of 30,000 additional State houses as well as a further 12,000 to be erected by private enterprise up to the end of 1948. Luxury building is banned at present, and the floor space for all types of dwelling is restricted. Town planning, too, is now in full swing; thus, the plan for Auckland provides for an increase in population up to 400,000 within 25 years, with an industrial zone, a green belt, and so on.

A recent writer on New Zealand architecture has complained that it still remains obstinately conservative, blindly heedless of the latest international trends. It is true that a few really advanced designs are now being published, such as Paul Pascoe's proposed community centre at Rabgioro, near Christchurch, based on the pure gospel of Gropius, and in some of the new stores mentioned above there is an abundance of continuous glazing that recalls Erich Mendelsohn; but, nevertheless, it does seem that the ablest architects in New Zealand are content, or are compelled by their clients, to hasten slowly, and to let others experiment with current fashions before they burn their fingers. To some of us, that may appear excusable; but, while congratulating them on the sanity and dignity of many of their recent buildings, one may draw attention to the extreme originality of the War Memorial Carillon at Wellington.

(To be continued.)

*** All the illustrations in this article are supplied by the courtesy of the High Commissioner for New Zealand. The next article will deal with Burma, Malaya and Hong Kong.

Welwyn and Hatfield New Towns.

THE approval has been obtained from the Minister of Town and Country Planning to the following appointments as architectural town planners:—

For the Welwyn Garden City Development Corporation, Mr. Louis de Soissons, O.B.E., A.R.A., F.R.I.B.A., M.T.P.I. For the Hatfield Development Corporation, the Hon. Lionel Brett, M.A., A.R.I.B.A. Mr. Louis de Soissons was from the start the town planner for Welwyn Garden City Limited and the Hon. Lionel Brett has been engaged in the preparation of plans for Redditch and Weston-super-Mare respectively.

Chairmanship of Stevenage Corporation.

SIR THOMAS GARDINER, G.B.E., K.C.B., has resigned from his appointment as chairman of Stevenage New Town Development Corporation. At the time of his appointment Sir Thomas made it clear that he would be able to undertake this work only for a limited period. Mr. Silkin proposes to appoint to the vacancy Alderman the Rev. Charles Jenkinson, of Leeds.

CORRESPONDENCE

Co-ordination of Training for Building.

TO THE EDITOR OF *The Builder*.

SIR,—It was recently disclosed by the House of Commons Committee on Public Accounts that large numbers of workers were still being trained for the building industry when it was well known that building schemes had been cut. We should like to suggest that the time has come when it would pay the country more thoroughly to co-ordinate its training methods.

My own company recently opened a large factory at Newcastle producing a decorative laminated plastic with a large potential export demand. Staffing problems presented, and still do present, a major difficulty and we are ourselves having to undertake the complete training of all new employees. This has taken time and thereby lost us valuable foreign currency.

Under present conditions the flow of labour is closely controlled, and it should be comparatively simple also to forecast the relative needs of various industries and firms. Is it not possible to establish a planning board to co-ordinate, in respect of training, the needs of industry with the workers available? This could cover not only the immediate present, but could accurately judge the probable requirements of the labour market some time ahead. Such a board might result in considerable saving to industry and help in solving our economic problems. I feel sure that leading industrialists would be only too happy to co-operate with the Ministry of Labour in founding a plan along these lines.

GRAHAME MARTIN-TURNER.
Director De La Rue Insulation, Ltd.
84, Regent-street, W.1.

Prefabricated Industrial Buildings.

TO THE EDITOR OF *The Builder*.

SIR,—Your leading article in the issue of August 27 calls attention to a crying need of British industry which at the moment suffers from a shortage of factories and other industrial buildings.

The solution suggested by you of employing prefabricated units may be novel for this country, but it has been in use on the Continent, particularly in Italy, for many decades, and the buildings are still in service in a variety of climates ranging from the equatorial to the cold of the Balkan Mountains. These buildings consist of factories, hospitals, administrative buildings—such as post offices and police stations—and vary in size from a single large room to buildings having uninterrupted clear spans of 150 ft. with areas of 40,000 sq. ft. The time of erection as compared with conventional methods is fractional, particularly for awkward locations such as sites lacking proper roads. The cost is also considerably less in all cases than for similar areas built in the orthodox manner, and I agree entirely with your statement that the application of modern assembly methods is overdue in the building industry.

I am the consultant architect to a company specialising in this type of construction, and have had ample opportunity to convince myself that the system employed is structurally sound. The materials are wood and smooth-faced fibreboard in the form of interlocking panels, and the thermal insulation of the normal panel is equal to that of an 11-in. brick cavity wall plastered. It is useless to think of constructing buildings of this nature with timber in this country, but surely there is no reason why these buildings should not be imported in their prefabricated units which, without doubt, would give considerable aid to the needs of this country. Difficulties, however, are sure to be encountered in negotiations with the various Ministries, both from the import angle and building regulations, but when the housing need was great regulations were overcome, and now that the industrial and social welfare problem is so urgent, similar methods can surely be employed. These will help us to expand our capacity in a very short space of time and will also conquer some of the bottlenecks holding up ambitious schemes in parts of the Empire.

W.1. PETER TEMPLE, L.R.I.B.A.

Planning for Daylight.

TO THE EDITOR OF *The Builder*.

SIR,—Mr. Swarbrick's article of August 20 about the control of building development for improved daylighting appears to be argued on a misunderstanding. It chiefly concerns the "indicators" which were devised as simple tests to be used in designing a building, or checking it, to see if it allowed reasonable light to reach neighbouring buildings. Mr. Swarbrick appears to be under the impression that they are intended to help compute daylight factors in the neighbouring buildings, and draws attention to deficiencies they would have for that purpose. It is a little difficult to see why the confusion has occurred, but since it has it is desirable to emphasise that the "indicators" are intended only as an aid in controlling development.

W. ALLEN.
Building Research Station,
Garston, Herts.

London Builders' Foremen.

TO THE EDITOR OF *The Builder*.

SIR,—As president of the London Association of Builders' Foremen and Clerks of Works, I feel it is my duty to solicit the generous assistance of your readers, so that the splendid work carried out by the Association in the past may be continued in the future.

There are at present 51 pensioners of the Association, enjoying a weekly pension totalling almost £1,250 per annum, and the majority of them will receive no benefit from the new Social Insurance Act. It is regretted that circumstances preclude us from holding our annual dinner in aid of the fund this year. I therefore make this earnest appeal to your readers for a donation, asking those who have so generously supported us in the past to do so again, and to enlist the support of many new friends. I know that the merits of the cause will be worthy of their consideration and support, and I shall be pleased if donations are forwarded to the Financial Secretary, Mr. J. H. MacDonald, 5, Pevensey-avenue, N.11.

W. R. TOOGOOD, PRESIDENT.

BOOKS RECEIVED

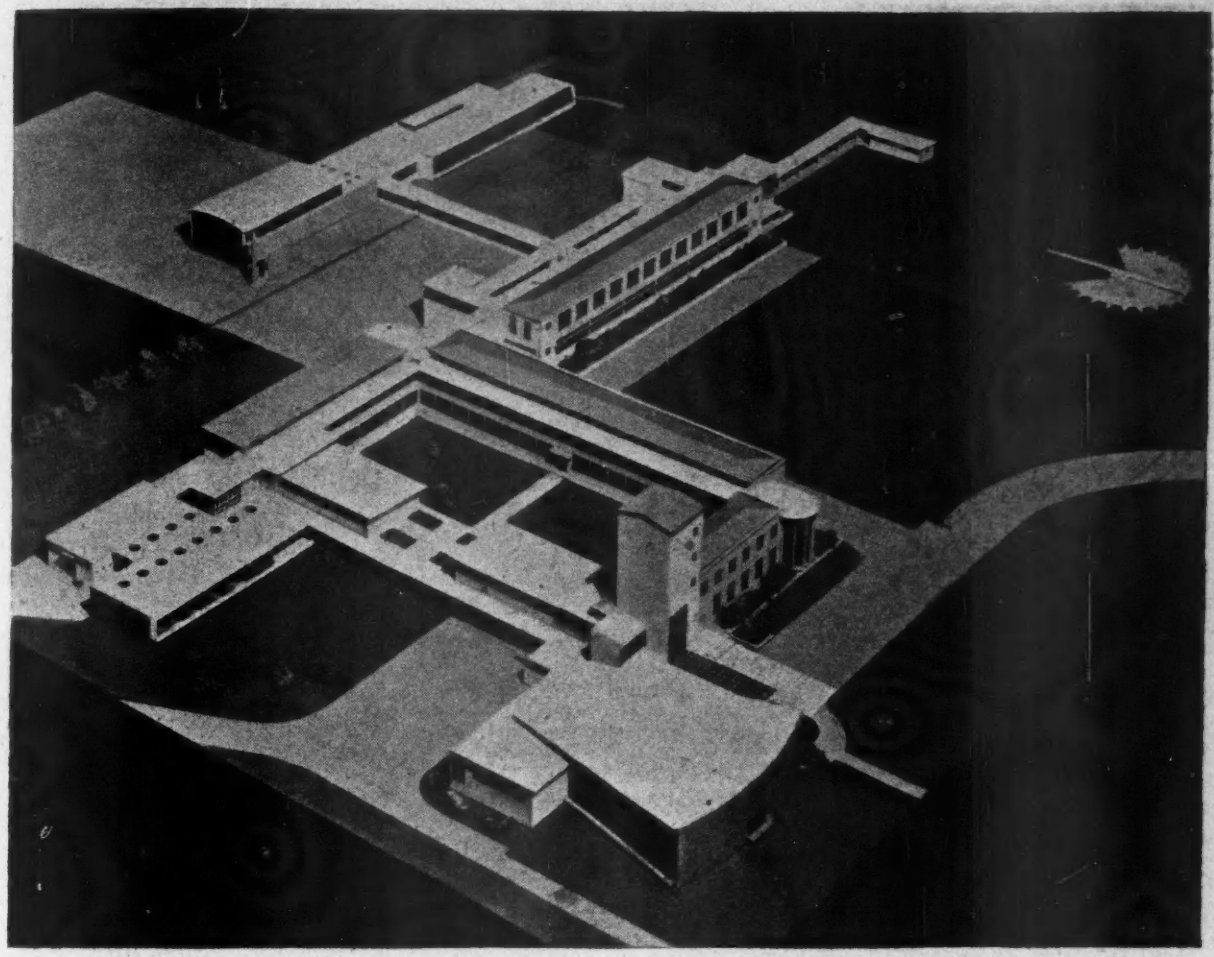
PLANNING OUTLOOK. Edited by J. S. Allen. (London: Geoffrey Cumberlege, Oxford University Press.) Price 10s. 6d.

FLETCHERS' QUANTITIES, 12th Ed. Revised by A. E. Baylis. (London: B. T. Batsford, Ltd.) Price 30s.

HISTORY OF BAKELITE LTD. By T. F. Fielding. (London: Bakelite Ltd.)

YEAR BOOK OF THE HEATING AND VENTILATING INDUSTRY. (London: Technitrade Journals, Ltd.) Price 5s.

BRITISH CATALOGUE OF PLASTICS. (London: The National Trade Press, Ltd.) Price 60s.



MODEL OF NEW SCHOOL, KILSYTH. Basil Spence, O.B.E., F.R.I.B.A., F.R.I.A.S., Architect.

SCOTTISH SCHOOL DESIGNS

"New Schools" Exhibition in Glasgow

LARGE-SCALE models and drawings that give a cross-section of the work being done by Scottish architects to meet the post-war needs for schools in Scotland have been added to the R.I.B.A. "New Schools" Exhibition, which opened in the McLellan Galleries, Glasgow, yesterday (September 16), where it can be seen until September 28. The exhibition is being presented by the Scottish Committee of the Council of Industrial Design and the Royal Incorporation of Architects in Scotland.

This exhibition includes models and drawings illustrating designs of new schools adopted for erection or in course of building by education authorities in the counties of Stirling, Ayr, Fife and Dumbarton, and also in Edinburgh, Glasgow, Dundee and Aberdeen.

Two of the models are from Stirlingshire. One shows a new school at Falkirk for children over 12 years, to be built mainly on the Orlit system, with some traditional brick building. The other is of a new academy at Kilsyth. This scheme (illustrated on this page) combines pre-war and post-war trends and is the work of Mr. Basil Spence, O.B.E., F.R.I.B.A., F.R.I.A.S.

Stirling C.C. commissioned Mr. Spence in 1937 to design a building for 450 pupils. The pre-war plan includes a dining-room, a library, a gymnasium and a swimming-pool that can be turned into an open-air pool in fine weather by pushing back the windows looking on to a grass courtyard. The gymnasium and the pool have side lighting. The building was planned to allow the maximum of light, air and sunshine into the classrooms. A concrete sculptured group, seventeen feet high, was completed for the entrance tower, and the original plans included a heraldic design for the entrance hall ceiling and murals in the hall and dining-room. Building had reached first-storey level when it was stopped after the outbreak of the war.

Recently Mr. Spence was asked to plan extensions on post-war lines to accommodate about 700 pupils. The architect had to graft an assembly hall, a dining-hall and a kitchen on to the older building and to provide a second gymnasium and four new classrooms. The gymnasium and the classrooms have been combined in a separate building, joined by a covered way to the main structure. The gymnasium will have clerestory lighting and a gable wall of glass. It is intended to use a shell concrete roof with independent concrete supports free of the walls. Part of the wall at the entrance hall of the extension will be of glass, flanked inside and outside by flower-beds, thus giving an open-air look to the hall. The entire academy will have a reinforced concrete frame, with light bricks faced by granite chips and quartz.

Other Schemes.

The Dundee model is for a primary school of three blocks at Linlathen; and Fife County County Council are showing drawings for an aluminium school, on which building has started, near Lochore, a mining village. The model from Ayrshire is of a primary school at Old Cumnock to accommodate 600 children, built mainly on the Orlit system. The Dumbartonshire plans are for schools to be erected on bombed sites at Clydebank and at Yoker and Dumbarton. Messrs. J. A. O. Allan, Ross and Allan contribute drawings of three infant and primary schools in the suburbs of Aberdeen. Mr. J. A. Coia, F.R.I.B.A., is showing a plan for a private school in Glasgow.

The drawings from Edinburgh are of secondary schools at Pilton and Stenhouse. Two models submitted by the Scottish Education Department illustrate the type of cookery rooms recommended for domestic science work.

Although Scottish education authorities are faced with a large building programme, a start has been made. By the middle of this year, 55 major building projects, involving the erection of 481 rooms, were in progress and plans for buildings estimated to cost over £5,000,000 were under discussion. The raising of the school-leaving age to 15 means the building of some 1,850 rooms, most of them as temporary standardised one-storey buildings which will have to be replaced within the next 25 years. Buildings are also required for nursery schools and for further education.

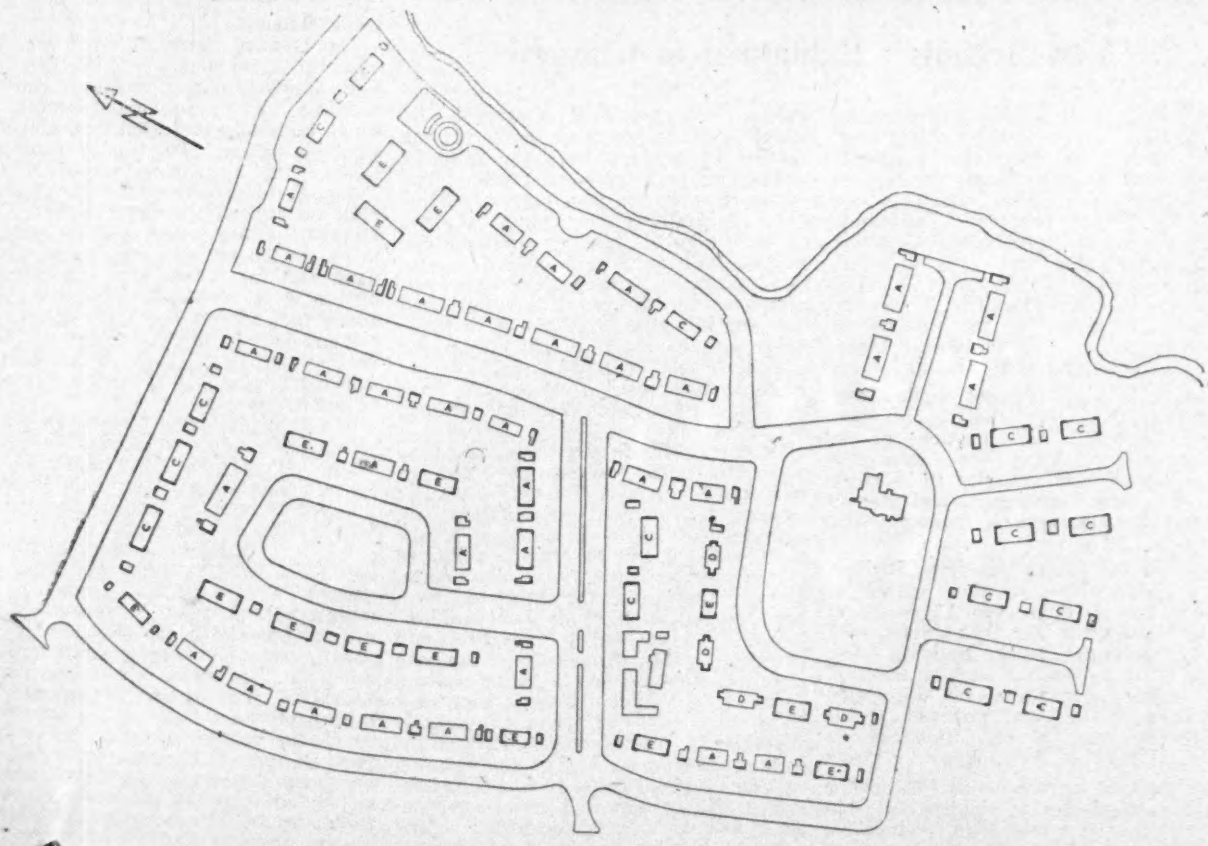
A Typical Close. *Below:* Layout.

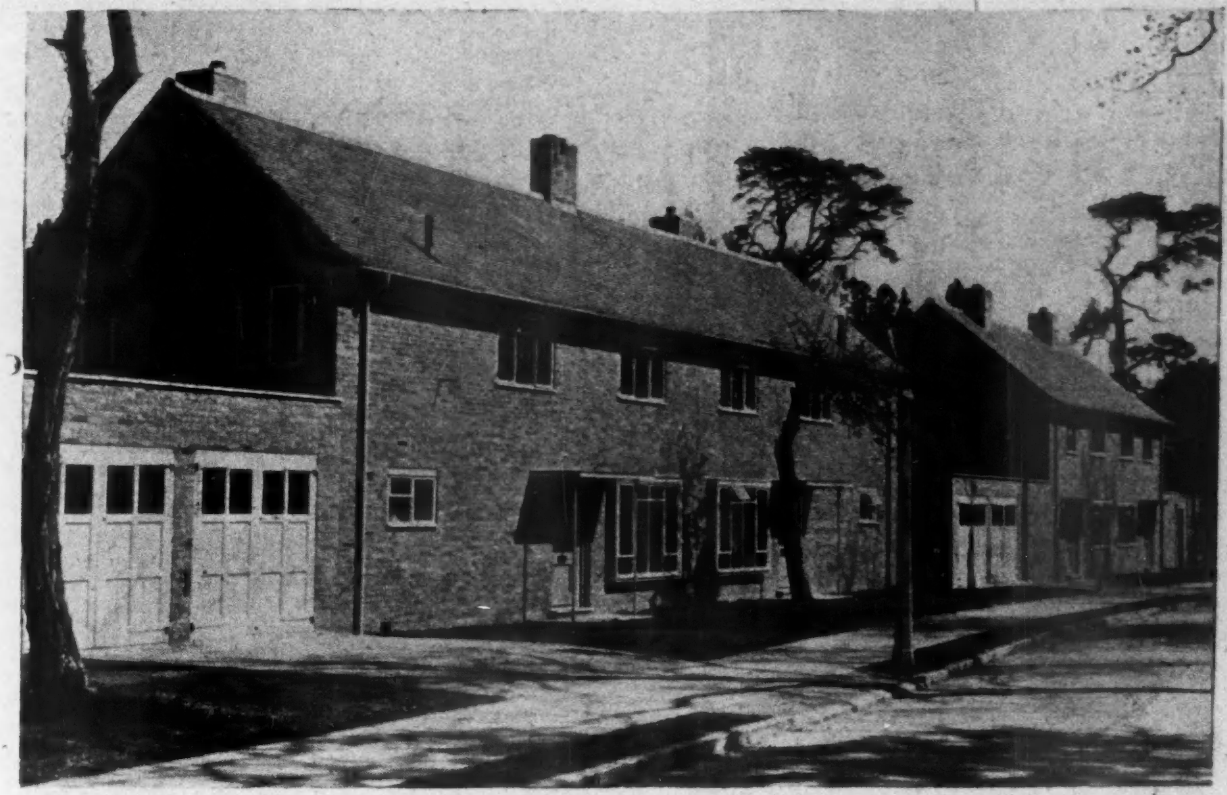
A NEW HOUSING SCHEME

A. C. HOPKINSON, M.A., A.R.I.B.A., A.M.T.P.I., Architect

THIS ESTATE, RECENTLY COMPLETED, consists of a system of concrete roads with separate drainage for soil and surface water, together with 140 houses, garages and outbuildings.

Work actually commenced in December, 1946, and was immediately affected by the wintry conditions which set in before Christmas. Further serious delays were caused by the severe spell of February and March, 1947, followed by further inconvenience caused by the subsequent floods, which obstructed roads leading to the town and delayed the





Four-bedroomed Houses. Type "A." *Below:* **Plans.**

delivery of materials. The primary object was to secure the hardcore formation of an access road and several of the branch roads in order to facilitate the distribution of materials. At the same time work was commenced on the foundations to houses in order that full advantage could be made of the roads when ready.

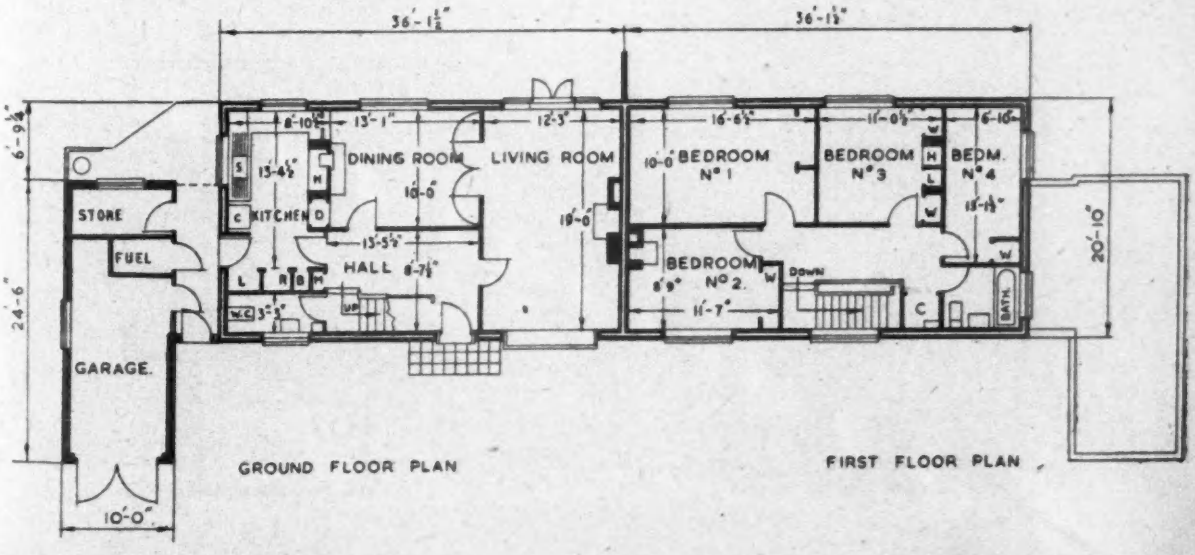
At this stage mechanical plant was brought into full use, and caterpillar tractors drawing large scrapers were used to remove the top-soil from areas to be occupied by roads or houses, and deposit this in spoil heaps, to be used later for forming the verges and planted spaces that front the houses. At the same time trenchers were excavating the main runs of sewers and were brought into use for excavating the foundation trenches to the houses.

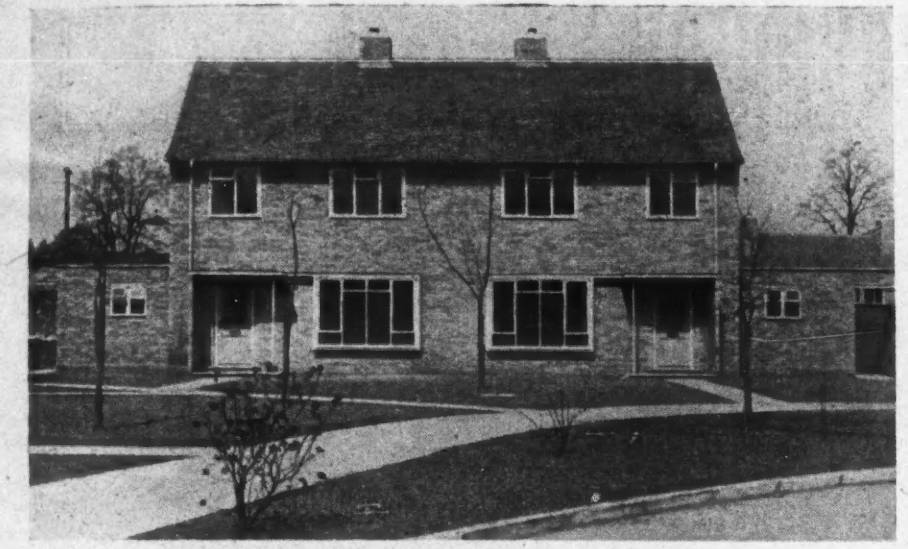
A large central mixing plant for concrete was set up in the centre of the estate, and a fleet of dumpers ran mixed concrete to all parts of the site. This also contributed to the saving of manpower.

The houses themselves are of four separate types, each containing the most modern equipment. The largest type is a four-bedroom house with lounge, dining-room and kitchen, and outbuildings comprising garage, fuel store and w.c.; this is known as Type "A." Other types are three-bedroomed houses with garage and outbuildings as before; these are Types "C," "D" and "E." All types are semi-detached.

Type "A" houses have a "Sutton" convector-type solid-fuel stove in the lounge, which is a space heater to that room and at the same time warms two of the bedrooms through ducts formed in the walls. All types have a central heat service unit which is delivered in prefabricated sections and combines hot and cold water services and storage grouped around the cast-iron flue pipe of a "Siesta" stove. This stove is a space heater, and at the same time provides the hot water and warms one bedroom through a duct formed in the service unit. Both types of stove draw fresh air through ducts under the floors, and are designed to burn economically and efficiently.

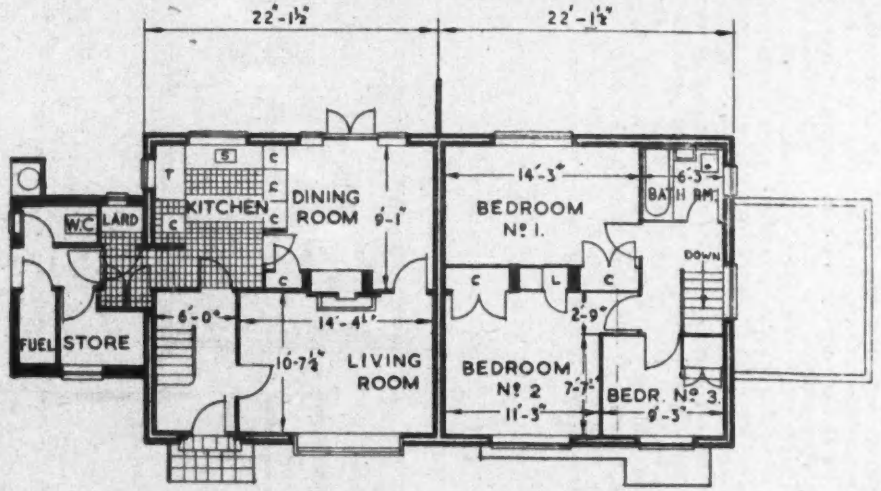
The external walls of all houses are



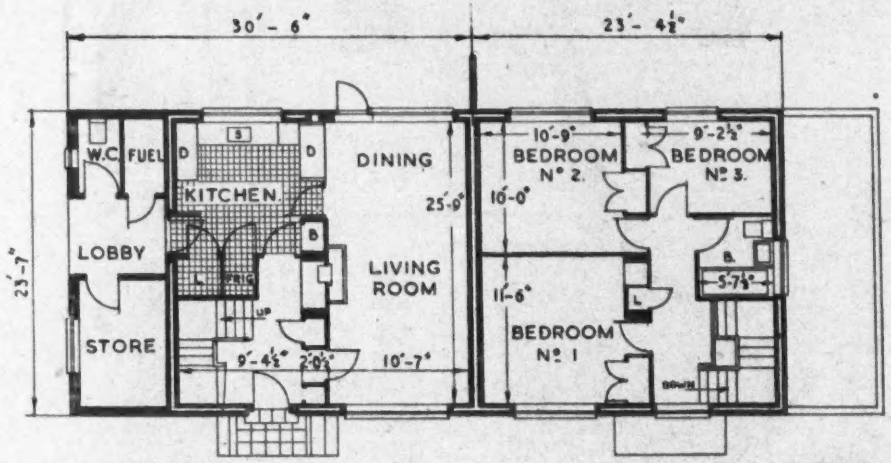


Type "D" (3-Bedroomed) Houses. *Below:* Plans.

Type "E" (3-Bedroomed) Houses. *Below:* Plans.



GROUND FLOOR PLAN FIRST FLOOR PLAN



GROUND FLOOR PLAN FIRST FLOOR PLAN

A NEW HOUSING SCHEME

faced in a hard, golden brown facing, flush pointed in a rich cream, and with garages and link walls all faced in the same brick.

Roofs are covered with a hard, well-burnt machine-made clay tile which, although it does not match the brick, provides a suitable contrast.

Wooden casement frames of standard E.J.M.A. design have been used throughout, and all possible economies in the use of timber have been effected. Ground floors are finished in pitchmastic, but the first floors are of conventional timber flooring on joists.

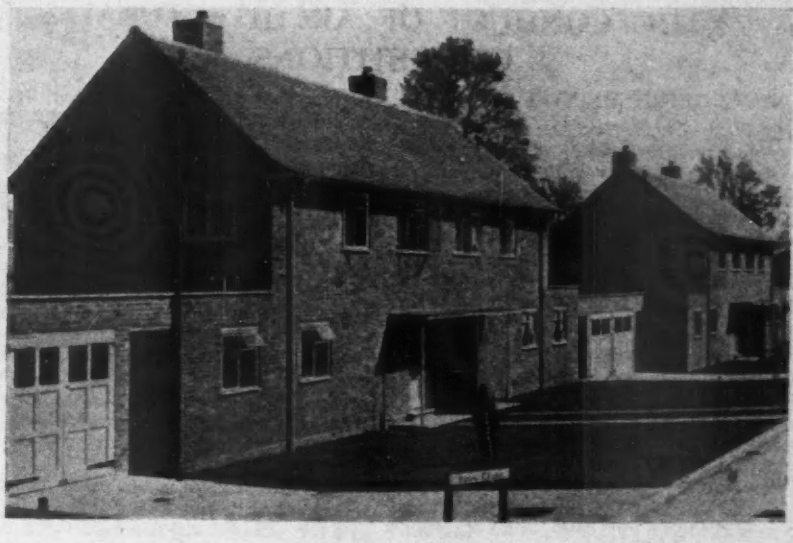
Roofs are covered with untearable felt before tiling, and a layer of glass wool is spread on top of the ceiling joists to provide suitable protection against extremes of heat or cold.

Kitchens are fitted out with a maximum of cupboards and work tops. A gas cooker is provided, and space is allowed for the later installation of a refrigerator. All bedrooms have built-in wardrobes fitted with hanging rails.

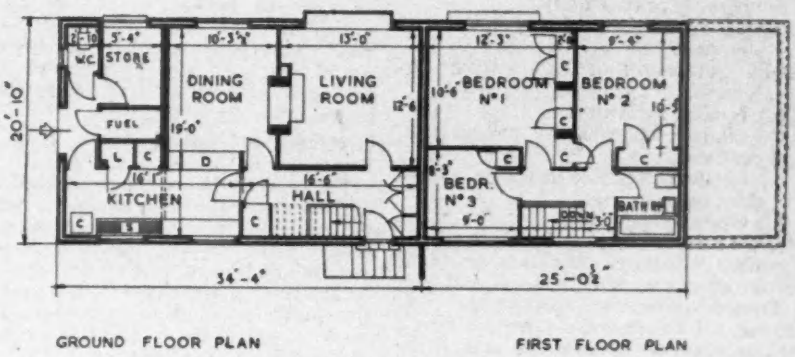
The 140 houses are due for completion by the end of the summer, and the whole project will have taken 18 months. A large proportion of the houses has been handed over already, and further houses are being made available weekly.

The Clerk of Works is Mr. W. L. Fayers.

The general contractors for the scheme are Messrs. Lavender, McMillan, Ltd., and principal suppliers or sub-contractors are: Facing bricks—Coleford Brick and Tile Co.; roof tiling—Fred Parker (Roofers), Ltd.; timber—Phoenix Timber Co., Ltd.; plumbing and hot-water service—Structural Services, Ltd.; joinery—Emcol Products.



Type "C" Houses.



Plans of Type "C" Houses.

A NEW HOUSING SCHEME. A Typical Road.

THE CONDUCT OF ARCHITECTURAL COMPETITIONS

A MARS GROUP REPORT TO R.I.B.A.

In May of this year the MARS Group prepared and forwarded to the President of the Royal Institute of British Architects a report on Architectural Competitions advocating certain changes in the present system. It is understood that the R.I.B.A. Competitions Committee has considered the report and will shortly be reporting to the President. The text of the report follows.

THIS report deals with certain aspects of Architectural Competitions. The MARS Group has studied the various documents issued by the R.I.B.A. on this subject and finds itself in general agreement with the policy of the R.I.B.A., and particularly with the formation of the Competitions Committee. It is felt, nevertheless, that in certain respects the present system could be improved, and suggestions are put forward in the appendix.

There are two main ways of finding the right architect for a job.

(1) BY APPOINTMENT.
- (*a*) Directly or on inquiry.
- (*b*) By submission of portfolios and interview.

(2) BY SUBMISSION OF COMPETITIVE DESIGNS.
- (*a*) Limited by invitation.
- (*b*) Limited by selection on basis of portfolios.
- (*c*) Limited according to group, nationality, age, etc.
- (*d*) Open competition.

If the methods listed under (2) above are a matter of form or obligation, or if time for an open competition is not available, a limited competition may be the right answer. If the promoters are not bound by precedent or obligation, and desire that the problem should be investigated from all points of view, or should the nature of the problem be unusual and call for originality and a fresh approach, an open competition may be very desirable. But then it must also be judged with an open mind, otherwise it is a waste of time.

If we could find a way of ensuring that the prize-winning designs in architectural competitions were also the " best " designs, then all criticism against the competition system would disappear. The advantages of the system would then be very obvious and very great, and

(1) It would be an excellent and (for the promoters) economical way of finding the best solution to particular architectural problems.

(2) It would give talented young architects a chance of showing what they could do, and of obtaining work and recognition.

(3) It would be a means of discovering and making use of the best architectural talent. The importance of this cannot be stressed too much ; it is the main need of architecture to-day that we should make the best use of our good architects.

(4) It would be a means of educating the younger competitors and keeping the older men up to the mark.

(5) Through exhibitions and publicity it would stimulate the interest of the public in architectural questions, and would thereby help to form architectural taste, a necessary prerequisite to the emergence of good architecture.

(6) It would be a welcome method for government departments (fast becoming the most influential patrons of our time) to obtain an architect for important projects without the embarrassment of choosing between the rival claims of eminent architects.

These outstanding advantages of the competition system easily outweigh the disadvantages, provided the system is properly applied. The only unavoidable disadvantage is the waste of time and effort on all the unsuccessful schemes, but this concentration of effort on a given problem has its value for the competitors, the promoters, and for architecture in general, and therefore it would be wrong to say that it was entirely wasted. Even unsuccessful designs may throw new light on a problem, and may influence architectural thought. What must be insisted on, however, is that the instructions issued to the competitors are clear and unambiguous, that the judgment is conscientious and fair, and that adequate publicity is given to all the designs entered.

For this reason it has been necessary to safeguard the interest of the competitors and the architectural profession as a whole by issuing rules for the fair conduct of competitions. These rules are contained in " Regulations governing the promotion and conduct of Architectural Competitions as approved by the Royal Institute of British Architects and by its Allied Societies." They have proved remarkably successful. Nevertheless, we feel that they are open to criticism and improvement on the following points.

(a) Choice of Assessor (para. 1 of the Regulations).

The crux of the matter is the choice of the Assessor. He must be able to satisfy the conditions set out in the opening paragraph of this report ; that is to say, he must be the type of man who is known to be able and willing to consider a problem objectively and whose appointment is likely to call forth the greatest ingenuity and skill from the competitor.

(b) Instructions for the Guidance of Assessors (Note to para. 2 of the Regulations).

More distinction should be made between *conditions* which are binding and *suggestions* which are only for the guidance of competitors. In this connection the *functions* to be fulfilled by the design should be laid down rather than the *accommodation* to be provided, since the solution may lie in the provision of multi-purpose accommodation. It would be helpful if conditions were drawn up in three parts, to have the following purpose :

Part A : Is general for all competitions and should contain the general rules about anonymity, the marking of entries, the rules governing non-participation of Assessors, etc.

Part B : Should contain all the conditions relating to the particular problem which are absolutely binding on the competitors if their design is not to be rejected out of hand. Any absolutely binding conditions about the size, etc., of drawings also belong to this part, unless they are only suggestions.

Part C : Should state clearly the problem to be solved and give the information on which the solution should be based, such as surveys of site levels, water levels, tides, existing drains, etc., together with any guidance which the promotors may wish to suggest but is not absolutely binding on the competitors. The technical information should be as complete as possible so that the work of the competitor will not be wasted by being based on incorrect or insufficient data.

(c) Assessor's Report (para. 2e).

The Assessor should issue with the award a full report in which the various designs are referred to, the stages at which the most promising were eliminated and on what counts, and finally the reasons for the award. This report should be made available to competitors and the technical Press.

(d) Public Exhibition (Note to para. 8).

All the submitted designs should always be publicly exhibited (including those eliminated for infringing an essential condition) for a reasonable period, and adequately advertised.

(e) Designs involving new methods of construction or new materials.

If the competitors are asked to solve special structural or technical problems or if the designs are dependent on the feasibility of the solution of such problems, the Assessor should be able to call in one or more Consultants qualified to judge the entries from this angle, *i.e.*; they should be qualified engineers or technicians.

The point of such a provision is that when a work relies on some pioneer technical method which may be unknown to the Assessor, the competitor should be given a chance to satisfy the Assessor's consultants that his method is sound. With the rapid technical advance being made at the present time such provision may be advisable.

(f) The two-stage competition.

The object of the two-stage competition is to eliminate designs in which the general conception is on the wrong basis. It has proved a useful device in the past and is recommended when a problem is very open and the promoters call for general ideas on function and layout as well as for detailed solutions, and can afford the additional time incurred by this method of selection. An open competition would enable an Assessor to choose a limited number of competitors who might be invited to elaborate their ideas in more detail in the second stage.

The MARS Group has also considered a number of other methods of holding competitions, such as the appointment of anonymous Assessors, the inclusion of outstanding students on a jury or the direct election of Assessors at R.I.B.A. elections. But for various reasons, it has been agreed not to include any specific recommendations under these heads in the proposed amendments which are submitted in the appendix to this report. It is the opinion of the MARS Group that the competition system should be made a powerful instrument in the hands of the R.I.B.A. and properly used it should serve the interests of both the profession and the public to such advantage that competitions would bring about a real revival of architecture.

PROPOSED AMENDMENTS (APPENDIX A)

Regulations.

Para. A : After " standing " add " capable of considering a problem objectively, whose appointment is likely to call forth the greatest ingenuity and skill from the competitor."

For " and whose " read " their."

Delete " to whom."

After " submitted " add " to them."

After F2(d) insert : " If any design submitted involves the use of special structural or other technical methods, the Assessor shall have authority to call on the President of the R.I.B.A. or of the professional institute most nearly concerned to recommend a specially qualified consultant under terms to be agreed with the promoters."

After F2(f) insert : " To report to the Competitors the principles on which the unsuccessful entries have been eliminated so that each Competitor can know why he failed."

Para. F8 : After " to all Competitors " add " and to the public."

Delete " Note " and two paragraphs following.

Directions for Assessors.

Para. 3 : After second sub-para. insert :

" Conditions should be clearly divided into (A) Conditions essential to all competitions as laid down in R.I.B.A. Regulations ; (B) Conditions essential to the particular competition, including dates of submission, method of presentation and site restrictions ; (C) Suggestions including accommodation requirements. Such requirements should concentrate on the functional demands rather than on size of particular rooms.

" In no circumstances should a design that does not comply with (A) (B) above be awarded a premium and the conditions should be formed with this point in mind."

After para. 5 insert :

" 5a : If any design submitted involves special structural methods or technical devices which the Assessor does not feel competent to judge, he may ask for the appointment of a consultant to assist him, on terms to be agreed between the President and the Promoters."

Para. 8 : Delete " Only . . . and if." Insert " In certain cases it may be desirable for a competition to be held in two stages. If. . . "

SOME MODERN TRENDS IN BUILDING MATERIALS

THE RESPONSE TO CHANGING DEMANDS

DR. F. M. LEA. O.B.E., D.Sc., F.R.I.C., Director of Building Research in the Department of Scientific and Industrial Research, read a paper* on "Some Modern Trends in Building Materials" at the British Association Meeting at Brighton on September 14. Following are his remarks:—

There is perhaps some danger that the title of the present session—"Building Materials with Special Reference to Newer Materials"—may raise undue expectations. The word "new" is apt to connote some striking new invention, some development that will at one stroke solve many of the problems of building. This may be the more likely because we have in recent years seen spectacular advances in some branches of applied science, as, for example, in the development of radar, the discovery of penicillin, the rapid progress in chemotherapy, and the destructive use of atomic energy. But science and technology proceed by evolution rather than revolution and it is not surprising that the rate of evolution is most striking in young industries which owe their very existence to scientific discovery.

Older industries, by their very nature, will not undergo such rapid change. The basic materials used in the building industry, and the methods of building, have behind them long ages of slow development and inherited experience. New materials and new methods have to be grafted on to an established body of practice and used by the existing craftsmen and labour force. This is a more difficult operation than might, perhaps, be imagined. The building industry contains a large number of separate firms and, of the total labour force, over 30 per cent. are employed by small firms having less than 20 men each, and rather less than 40 per cent. by large firms with more than a hundred men each. The craft training given in building schools can only be slowly changed and cannot take any serious account of new materials until the extent of their use warrants it, while many apprentices receive no school training at all.

The success of tradition as a basis for any industry depends on continuity and sufficient time for the value of new materials or new methods to be assessed by long-term experience. Until late in the nineteenth century the building industry used mainly local materials worked by craftsmen familiar with their properties. With the development of modern transport and large-scale manufacturing industries local materials were replaced by mass-produced ones widely distributed. Though often better than the materials they replaced, their properties were different, necessitating alterations in craft technique, while the traditional knowledge of the behaviour and correct method of use of the local materials was no longer applicable. The speed of building also increased and the designer was faced with demands for new forms of structure and was, indeed, eager to take advantage of the new methods of design which the introduction of reinforced concrete, of steel, and other materials rendered possible. This resulted in a major break in the tradition of the building industry, starting back in the nineteenth century and gathering ever-growing force throughout the present century. It has rendered essential the scientific study of building so that in reshaping its traditions to modern needs their real significance is not forgotten. Before that which is new can be joined to the old they must both be expressed in similar terms. As modern building has demonstrated, new methods and new materials can too often go astray for lack of this understanding. The application of scientific methods to the study of building problems has been vigorously pressed, particularly over the past twenty-five years, and is now well on its way to reinterpreting in modern terms the empirical traditional knowledge of the industry and to supplying a sound technical basis for new developments, but much still remains to be done. Further, the industry has still to absorb in its design and craft much of what can now be told.

Despite its inherent tendency to cleave to traditional methods, the building industry is now passing through a period of rapid change which is stimulating the modifications of existing materials and methods of construction, and the introduction of new ones. The difficulties of adapting design and craft skill still, however, remain, and are often severe handicaps to the rapid development of new methods. The immense effort that has been required to develop non-traditional methods of house construction over the last few years gives a measure of this.

With that general preamble I now want to try to analyse some of the forces which are influencing the development of building materials, rather than to attempt to go into much detail of individual materials, for the discussion of these forms the subject of the later contributions to the present meeting.

The Scale of Material Requirements.

I want first to consider the implications of such points as the scale on which materials are required, the ease with which they can be utilised in existing craft processes, and the suitability of their properties for the purposes intended. These points are all significant in attempting an appreciation of the potentialities of any new development, and it is, indeed, their neglect which sometimes leads to over-optimistic assessment of the value or importance of some new material or process.

The basic materials of building are used in large quantities and any new product of this type that is to have more than a quite small local or specialised usage needs for its development large manufacturing resources and ample supplies of cheap raw materials. Thus some seven to eight million tons of cement are used annually, a figure of the same order as the annual production of pig-iron. The pre-war and, indeed, the present rate of production over recent months, of bricks, amounts to some 7,000 million per annum, or over twenty million tons weight. The production of plaster is now running at the rate of well over 200,000 tons per annum and of plasterboard some fifty million sq. yds. or about seventeen sq. miles. Sufficient clay and concrete roofing tiles and slates were produced in 1938 to cover some eleven sq. miles. Post-war production has not recovered to these figures.

Though for other materials the quantities are lower they are, nevertheless, still substantial and are such as to require a considerable industrial development if any real mark is to be made on the building industry. On the other hand the market is so large that a material which attracts only a small fraction of it can be commercially successful. This has led to an undesirable multiplication of "patent medicines," but it does facilitate the introduction of new materials which may eventually grow into major industries. The steady and progressive development of asbestos-cement, of concrete roofing tiles, and of building boards generally, until they have become major materials in the building industry, are cases in point. This process is inevitably a rather slow one spreading over many years. The face of building cannot be changed rapidly by some new material in the way that the prospect of recovery from illness may be almost immediately affected by a new drug.

Any building material which is to have more than a small and specialised use has to be capable of being used by methods which the building craftsman understands or can fairly readily be taught. Special techniques can find a place, but their general introduction into the building industry is likely to be slow and may, on occasion, meet active opposition. Building is not carried out in factories by repetition of an element of a mass production process which can be closely supervised, but by relatively small groups of men working in the open under conditions which do not lend themselves to close supervision. The labour force of the industry includes some 140,000 carpenters and joiners, 110,000 bricklayers, 140,000 painters and so on, and it is the craft skill of these that has to be used.

Finally, and in the end decisively, any new or modified product must have properties which meet a number of different requirements. It is not sufficient for a material to be excellent in one property if it falls below a certain minimum standard in a variety of others. High strength, or good thermal insulation, will not commend a walling material if it is insufficiently stable in volume and, in consequence, develops cracks under the conditions of use, yet that has been a typical failing of many otherwise promising new materials. Perhaps the commonest cause of disappointment in the development of new or modified materials is this tendency for designers or producers, in pursuing one particular end, to forget the other requirements that the material must also fulfil.

The development of materials in the building industry is determined by numerous factors, but for discussion it is convenient to isolate those which are stimulated by changes in the user's requirements and those which originate within manufacturing industry. Clearly these two sets of factors interact, for the introduction of new or modified materials may change building practice and set in train a new set of demands, while the extent to which the user's requirements can be met depends on the state of technical development of the industries concerned and on economic possibilities.

Three important trends in building that are altering the nature of the user's demands may be noted by way of illustration—the increased stress on the functional requirements of building structures, the urge to reduce the amount of labour in building work and, allied to it, prefabrication.

As an example of the first, let us consider an external wall to a building. This has a number of functions to perform. It must have adequate strength, resistance to moisture penetration, and durability, and it must afford satisfactory thermal insulation. In addition, it has to meet certain other requirements such as resistance to fire. All these functions may be

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served by one material as in the 11-in. cavity brick walling so commonly used in house construction. But these functions can be split between different elements; for instance, the external leaf of a cavity wall can be used to provide resistance to moisture penetration and durability and a different material used in the inner leaf to give good heat insulation. Or again, all the loads can be carried on a frame and the wall itself made up of quite weak materials. The division of the functions of a wall between different materials permits, in many cases, of a better all-round performance than can be obtained with any single material. The clearer recognition of this distinction between the different functions which a wall, or any other element of a building structure, has to perform and, more important, the assessment of these different requirements in quantitative, rather than qualitative terms, is doing much to determine the trend of present-day developments in building and its materials.

Thermal Insulation.

Much stress is now being laid on the improvement of heat insulation to a level better than that provided by 11-in. cavity brick walling, so that dwellings may be kept warm for the minimum consumption of fuel. This has stimulated interest in many forms of lightweight structural units which combine good thermal insulation with adequate strength for the loads arising in house construction, or of sheet materials of good insulating properties which can be used as linings to brick walls. It also creates a demand for materials for roof insulation, such as glass wool or slag wool, and for forms of floor construction which have better thermal insulation than the suspended timber floor.

The attempt to reduce the amount of labour involved in house construction also has an important influence. Walls can be built more rapidly by the use of building units larger than the brick, but there is a limit of about 40 to 50 lb. in the weight of a unit which one man can handle satisfactorily. This had led to the development of hollow clay blocks, and of lightweight concrete blocks of various types, and is stimulating further progress. Considerable time is taken in the internal finishing of a house and in the provision of its various services, such as plumbing. The use of sheet lining materials is in consequence increasing, while the partial or complete prefabrication of plumbing units which can readily be fitted together in the house is tending to produce changes in the materials used and in the plumbing craft.

Power Tools and Plant.

Most traditional building is done by hand labour, but a drive is now in progress to increase the use of power-driven tools and to develop suitable mechanical plant for many of the typical operations of building such as hoisting materials, digging foundation trenches, and moving scaffolding up and down. Existing machinery such as is used in large civil engineering works is usually too large or cumbersome for most building work. These methods, when developed, will inevitably influence the choice of building materials and components.

Prefabrication in house construction is not new—door and window frames, for example, have long come on to building sites all ready for installation—but its great increase in the post-war years has been due to the same desire to reduce the total man-hours of labour and to substitute work in a factory for work on a site. It reached its peak in the aluminium bungalow which arrives on a site in four main sections, which require only setting on prepared foundations, fixing together and connecting to services. Prefabrication, even in its less advanced forms, has altered the types of materials used and tends, for example, to substitute concrete in its many forms and light sheet coverings for brickwork and plastering. The further development of cement and concrete technology and of the manufacturing industries concerned will undoubtedly, therefore, continue to be of major importance to new advances in building methods.

The introduction of radically new materials in the building industry is not very common and they tend to come more often from industrial development in fields other than building than from within the building industry itself. Such instances are to be found in the use of aluminium sheet for the external cladding of the aluminium bungalow and of schools, or in some of the applications of plastics to building, as for example of resin emulsion binders for flooring materials and of polyethylene pipes which are now being tried for cold water services and other uses. Changes arising within the building materials manufacturing industry itself more often take the form of modifications of the properties of some existing material, or changes in its form and shape which facilitate its handling and use. These include instances of types already mentioned, such as the development of lightweight building blocks, whether of burnt clay or concrete, or the manufacture of plasterboard to replace some of the normal plastering work in buildings and the attempts to develop suitable methods for the application of plaster by spraying.

Materials from Industrial By-products.

An important source of new or modified building materials is to be found in the persistent attempt of modern industry to use all its by-products, since the building industry with its potentially large demand is often a favoured outlet. Thus the desire to utilise the slag from pig-iron production has resulted in the development of many uses for this material. By suitable rapid chilling of molten slag in water there is produced foamed slag, a material somewhat like pumice in structure and very suitable as a lightweight aggregate for concrete. Originating in Germany, it was first produced commercially in Great Britain in 1934 and the productive capacity is now over 250,000 tons per annum. Surplus straw from agriculture, sawdust, and the sand waste from china clay workings are other examples of by-products now finding a place in the manufacture of building materials. Even such an unlikely material as peat has been used as an aggregate in concrete for the construction of a building in the Isle of Skye. If this development can be pursued it seems likely to be of real value to the Western Isles where, owing to difficulties of transport the normal materials are very costly. The fine ash from electricity power stations burning pulverised fuel is often difficult and expensive to dispose of and the annual output in this country is now some 750,000 tons per annum, an amount which may well double within a few years. Various investigations are at present in progress to see if some suitable outlet can be found for this in the manufacture of building materials.

Shortages of materials have been another very potent cause of change. Substitutes are often regarded as inferior alternatives to be discarded when times permit, but sometimes the substitute establishes its own permanent place in the industry. Particular attention is being paid to substitutes for timber for flooring and other purposes. In general, this involves the use of concrete in some form or other, together with a suitable surfacing material.

Prestressed Concrete Units.

The development of prestressed concrete units for suspended floors has obvious attractions and is receiving much attention. This material, which saves some 80 per cent. of steel, compared with ordinary reinforced concrete, makes use of thin steel wire as reinforcement, the wires being held in tension while the concrete is cast round them. When the concrete has hardened, the ends of the wires are released and the tension in them puts the concrete into compression, resulting in advantages in the resistance of the units to bending. Prestressed concrete has been developed for various structural purposes in a number of European countries and is being widely used in this country for railway sleepers to replace timber, but its use for short slabs or beams such as are needed for, say, the first floors of houses is new.

Among floor-surfacing materials pitch mastic—a coal tar product—has come into increased use in recent years as a substitute for asphalt mastic which is made from bitumen or bituminous rock, both imported. There are a number of other interesting new floor surfacings which are also laid in a plastic state and subsequently harden to form a jointless flooring. These make use of resin emulsions and rubber latex, together with cement, as a binder, or, in an older form, of bituminous emulsion and cement. Attempts to substitute an indigenous product, magnesia from seawater, for imported magnesite in magnesium oxychloride (magnesite) flooring, have not so far been carried to fruition, but a satisfactory product could probably be developed.

The search for substitutes for linseed oil for use in the paint and linoleum industries has been actively pursued. In paints, economy in linseed oil has been secured by the partial substitution of other materials such as certain petroleum residues, or by the greater use of synthetic resin constituents.

The various examples I have given of the introduction of new or modified materials could be elaborated much further, but they may suffice to show how the building industry is responding to changing demand and to economic circumstance. Taken singly, they may not appear spectacular innovations, but cumulatively their effect on the building industry is marked and without question must rapidly increase.

Mr. Bevan on the Housing Target.

MR. BEVAN, Minister of Health, opening the Hawksley Court Housing Estate, Stoke Newington (illustrated in our last issue), on Saturday last, said that by the end of October the first target of 750,000 permanent and temporary homes throughout Britain would have been reached. By the end of the year is was likely that every war-destroyed house in London would have been "made good." It would then be time to start making inroads on the houses which would have been built if there had been no war.

PRICE BUILD-UP TO-DAY

No. 6 (New Series)

Lead Pipe.

By "CAIN" (V. C. ABELL).

THE Standard Method of Measurement, 1948, states (Plumber, page 63): 10 (a), Pipes shall be classified according to their sizes and given in feet run; the weights per yard run and the method of fixing shall be stated; etc. Prices shall include for all running joints in the length. (b) Bends in pipes not exceeding 1 in. diameter shall be included in the price of pipe; those in pipes exceeding 1 in. diameter shall be enumerated. (c) Branch, expansion, diminishing and ornamental joints shall be separately enumerated, etc. (d) Connections to fittings, etc., shall be enumerated, etc. (e) Lengths of pipe not exceeding 4 ft., other than running lengths, shall be given separately in feet run and described as in short lengths.

Lead pipes up to 2 in. internal diameter are sold by the coil, which vary in weight but are to standard lengths as follows:

Up to 1 in. internal diameter, 60 ft.

1¼ to 2 in. internal diameter, 36 ft.

2½ in. and up internal diameter, 10, 12 and 15 ft. lengths.

The cost per cwt. varies with the quantity purchased; for the purposes of building-up prices the assumed cost is 112s. per cwt.

Except for the underground supply pipe or rising main as it is called, running joints are seldom required for one- or two-storey houses; as these articles and analyses refer to house building, no running joints for internal piping have been allowed for.

As the cost of labour for bends must be included in the rate per foot run of pipe for pipes up to and including 1 in. internal diameter the onus for their inclusion in the price build-up is on the estimator. For internal work one bend every 10 ft. of pipe is common in house building and is included in all analyses where applicable and unless otherwise mentioned.

The labour constants used in the analyses are extracted from Table A (p. 338). The constants for pipe fixed to brickwork with pipe hooks include the preparing and fixing of the necessary wood plugs in joints of brickwork; it is assumed that pipe hooks or clips are fixed not more than 2 ft. 6 in. apart. The constants for cast lead tacks include preparing and soldering the tacks to pipe and rawlplugging (No. 4 per double tack, No. 2 per single tack) and screwing tacks to brickwork.

For pipe in short lengths the labour constants for pipe only should be increased 100 per cent.

The following is an extract from the preamble to the plumbing section of bills of quantities; it has been adhered to in the compilation of the analyses. "All pipes fixed in roof space or passing through or between floor joists to be carried on lay boards (meas. sep.) and fixed with galvanised pipe clips. All pipes which on completion will be visible to be fixed with cast lead tacks rawlplugged to brickwork with brass screws, pipes fixed horizontally to have single lead tacks, pipes fixed vertically to have double lead tacks. All waste pipes to be fixed internally or externally with double cast tacks. Cast tacks to be not more than 2 ft. 6 in. apart, except where pipe passes through walls, partitions or floors."

Circumstances sometimes demand that branch solder joints be wiped *in situ*; these joints take longer to execute. The labour constants given for branch joints cover this emergency.

The cost of tallow, flux and lamp black is so minute per joint that it is not included in the analyses for solder joints.

The complete range of weights of pipes per yard run as laid down by local bye-laws has not been covered in the analyses, but estimators will gather that an increase or decrease of one pound in weight per yard run of pipe approximates 4d. per foot run.

The rates given are the net cost on site exclusive of site supervision, establishment charges and profit.

Grade "A.1" wage rates are taken. For the method employed in arriving at the cost to the employer of employing labour, see *The Builder*, November 28, 1947, or "Price Build-up To-day" (The Publisher, 4, Catherine-street, Aldwych, W.C.2, price 5s. 3d., post free). (*To be continued.*)

LEAD PIPE AND LAYING IN TRENCH

Description of item. One running solder joint, the labour to two bends and 60 ft. run of pipe taken in each case. Waste allowance on pipe = 2½%	Materials: Lead pipe		Solder	Paraffin	Materials: Cost				Labour		Labour: Cost			Total cost		
	Ft. run	lb.	lb.	Pints	Lead at per lb. 12.0d. Pence	Solder at per lb. 34.18d. Pence	Paraffin at per pint 2.12d Pence	Total cost of materials Pence	Plumber Hours	Mate Hours	Plumber at per hour 35.68d. Pence	Mate at per hour 28.80d. Pence	Total cost of labour Pence	Collection Pence	s. d.	Unit
½ in. lead pipe (6 lb.) and laying in trench	61.50	123.00	.60	.10	1,476.0	20.50	.21	**1,496.71**	1.84	1.84	65.65	52.99	**118.64**	1,615.35	2 3	per ft. run
½ in. do. (7 lb.) do.	61.50	143.50	.60	.10	1,722.0	20.50	.21	**1,742.71**	1.84	1.84	65.65	52.99	**118.64**	1,861.35	2 9	"
½ in. do. (9 lb.) do.	61.50	184.50	.60	.10	2,214.0	20.50	.21	**2,234.71**	1.84	1.84	65.65	52.99	**118.64**	2,353.35	3 3½	"
¾ in. do. (9 lb.) do.	61.50	184.50	.80	.15	2,214.0	27.34	.31	**2,241.65**	2.15	2.15	76.71	61.92	**138.63**	2,380.28	3 3½	"
¾ in. do. (11 lb.) do.	61.50	225.50	.80	.15	2,706.0	27.34	.31	**2,733.65**	2.15	2.15	76.71	61.92	**138.63**	2,872.28	4 0	"
¾ in. do. (12 lb.) do.	61.50	246.00	.80	.15	2,952.0	27.34	.31	**2,979.65**	2.17	2.17	77.42	62.49	**139.91**	3,119.56	4 4	"
¾ in. do. (15 lb.) do.	61.50	307.50	.80	.15	3,690.0	27.34	.31	**3,717.65**	2.20	2.20	78.49	63.36	**141.85**	3,859.50	5 4½	"
¾ in. do. (16 lb.) do.	61.50	328.00	.80	.15	3,936.0	27.34	.31	**3,963.65**	2.20	2.20	78.49	63.36	**141.85**	4,105.50	5 8½	"
1 in. do. (12.5 lb.) do.	61.50	256.25	1.00	.20	3,075.0	34.18	.42	**3,109.60**	2.58	2.58	92.05	74.30	**166.35**	3,275.95	4 6½	"
1 in. do. (16 lb.) do.	61.50	328.00	1.00	.20	3,936.0	34.18	.42	**3,970.60**	2.60	2.60	92.76	74.88	**167.64**	4,138.24	5 9	"
1 in. do. (21 lb.) do.	61.50	430.50	1.00	.20	5,166.0	34.18	.42	**5,200.60**	2.63	2.63	93.83	75.74	**169.57**	5,370.17	7 5½	"

TABLE A.—LABOUR CONSTANTS FOR PLUMBER AND MATE

Internal diameter of pipe	Lead pipe per ft. run: Weight per yard run (lb.)	Fixed to timber with pipe clips: Plumber Hours	Fixed to timber with pipe clips: Mate Hours	Fixed to brickwork with pipe hooks: Plumber Hours	Fixed to brickwork with pipe hooks: Mate Hours	Each — Extra to labour constants for pipe fixed to brickwork for Cast lead double tacks rawlplugged and screwed to brickwork: Plumber Hours	Each — Extra to labour constants for pipe fixed to brickwork for Cast lead double tacks rawlplugged and screwed to brickwork: Mate Hours	Each — Extra to labour constants for pipe fixed to brickwork for Cast lead single tacks rawlplugged and screwed to brickwork: Plumber Hours	Each — Extra to labour constants for pipe fixed to brickwork for Cast lead single tacks rawlplugged and screwed to brickwork: Mate Hours	Each — Bends: Plumber Hours	Each — Bends: Mate Hours
½ in.	3	.08	.08	.10	.10	.29	.29	.24	.24	.08	.08
	6	.08	.08	.10	.10					.07	.07
	7	.08	.08	.10	.10					.07	.07
¾ in.	5	.08	.08	.11	.11	.30	.30	.25	.25	.09	.09
	9	.09	.09	.11	.11					.10	.10
	11	.09	.09	.11	.11					.11	.11
1 in.	7	.09	.09	.11	.11	.32	.32	.27	.27	.13	.13
	12.5	.10	.10	.12	.12					.14	.14
	16	.11	.11	.13	.13					.15	.15
1¼ in. ...	7	.10	.10	.12	.12	.33	.33	.28	.28	.17	.17
	9	.10	.10	.12	.12					.17	.17
	16	.12	.12	.14	.14	.35	.35	.30	.30	.18	.18
	21	.13	.13	.15	.15					.20	.20
1½ in. ...	9	.12	.12	.14	.14	.36	.36	.31	.31	.25	.25
	12	.13	.13	.15	.15					.25	.25
	20	.15	.15	.17	.17	.38	.38	.33	.33	.30	.30
	27	.17	.17	.19	.19	.40	.40	.35	.35	.33	.33
2 in.	12	.15	.15	.17	.17	.41	.41	.36	.36	.50	.50
	14	.15	.15	.17	.17					.50	.50
	16	.16	.16	.18	.18					.60	.60
	28	.18	.18	.20	.20	.43	.43	.38	.38	.75	.75
	38	.20	.20	.22	.22	.44	.44	.39	.39	1.00	1.00
3 in.	17.1	—	—	.45	.45	.72	.72	.67	.67	1.50	1.50
4 in.	22.8	—	—	.50	.50	.80	.80	.75	.75	2.50	2.50

WIPED SOLDER JOINTS

Description of item	Materials: Solder per joint (lb.)	Materials: Paraffin per joint (Pint)	Materials: Cost: Solder at per lb. 34.18d. (Pence)	Materials: Cost: Paraffin at per pint 2.12d. (Pence)	Materials: Cost: Total cost of materials (Pence)	Labour: Plumber (Hours)	Labour: Mate (Hours)	Labour: Cost: Plumber at per hour 35.68d. (Pence)	Labour: Cost: Mate at per hour 28.80d. (Pence)	Labour: Cost: Total cost of labour (Pence)	Total cost: Collection (Pence)	Total cost: s.	Total cost: d.	Unit
Running joints and joints to fittings														
½ in.	.60	.10	20.50	.21	**20.71**	.60	.60	21.40	17.28	**38.68**	59.39	**4**	**11½**	**each**
¾ in.	.80	.15	27.34	.31	**27.65**	.70	.70	24.97	20.16	**45.13**	72.78	**6**	**0¾**	„
1 in.	1.00	.20	34.18	.42	**34.60**	.80	.80	28.54	23.04	**51.58**	86.18	**7**	**2½**	„
1¼ in.	1.25	.25	42.72	.53	**43.25**	.90	.90	32.11	25.92	**58.03**	101.28	**8**	**5¼**	„
1½ in.	1.60	.30	54.68	.63	**55.31**	1.00	1.00	35.68	28.80	**64.48**	119.79	**9**	**11¾**	„
2 in.	2.25	.40	76.90	.84	**77.74**	1.25	1.25	44.60	36.00	**80.60**	158.34	**13**	**2½**	„
3 in.	3.25	.50	111.08	1.06	**112.14**	1.75	1.75	62.44	50.40	**112.84**	224.98	**18**	**9**	„
4 in.	4.50	.60	153.81	1.27	**155.08**	2.00	2.00	71.36	57.60	**128.96**	284.04	**23**	**8**	„
Branch joints														
½ in. × ½ in.	.60	.10	20.50	.21	**20.71**	.75	.75	26.76	21.60	**48.36**	69.07	**5**	**9**	„
¾ in. × ½ in.	.70	.13	23.92	.27	**24.19**	.80	.80	28.54	23.04	**51.58**	75.77	**6**	**3¾**	„
¾ in. × ¾ in.	.80	.15	27.34	.31	**27.65**	.85	.85	30.32	24.48	**54.80**	82.45	**6**	**10½**	„
1 in. × ½ in.	.80	.15	27.34	.31	**27.65**	.90	.90	32.11	25.92	**58.03**	85.68	**7**	**1¾**	„
1 in. × ¾ in.	.90	.18	30.76	.38	**31.14**	.95	.95	33.89	27.36	**61.25**	92.39	**7**	**8½**	„
1 in. × 1 in.	1.00	.20	34.18	.42	**34.60**	1.00	1.00	35.68	28.80	**64.48**	99.08	**8**	**3**	„
1¼ in. × ½ in.	.90	.18	30.76	.38	**31.14**	1.10	1.10	39.24	31.68	**70.92**	102.06	**8**	**6**	„
1¼ in. × ¾ in.	1.00	.20	34.18	.42	**34.60**	1.10	1.10	39.24	31.68	**70.92**	105.52	**8**	**9½**	„
1¼ in. × 1 in.	1.20	.25	41.01	.53	**41.54**	1.16	1.16	41.38	33.40	**74.78**	116.32	**9**	**8½**	„

LEAD WASTE PIPES

Description of item	Materials														Labour					Total cost			
	Lead pipe		Cast lead double tacks	Rawl-plugs	Brass screws	Solder	Paraffin	Cost									Cost						
Waste allowance = 10% on short lengths 5% on other lengths	Ft. run	lb.	Number	Dozen	Dozen	lb.	Pints	Lead pipe at per lb. 12.0d. Pence	Double tacks at each Pence	Rawl-plugs at per dozen 4.32d. Pence	Brass screws at per dozen 5.0d. Pence	Solder at per lb. 34.18d. Pence	Paraffin at per pint 2.12d. Pence	Total cost of materials Pence	Plumber Hours	Mate Hours	Plumber at per hour 35.68d. Pence	Mate at per hour 28.80d. Pence	Total cost of labour Pence	Collection Pence	s.	d.	Unit
1½ in. lead (7 lb.) waste pipe in short lengths and fixing with cast double tacks as described. (4 ft. run of pipe taken.)	4.4	10.27	1	.33	.33	.17	.04	123.24	12.33	1.42	1.65	5.81	.08	**144.53**	1.29	1.29	46.02	37.15	**83.17**	227.70	**4**	**9**	**per ft. run**
1½ in. do. (9 lb.) do. do. (do.)	4.4	13.20	1	.33	.33	.17	.04	158.40	12.33	1.42	1.65	5.81	.08	**179.69**	1.29	1.29	46.02	37.15	**83.17**	262.86	**5**	**5½**	,,
1½ in. do. (9 lb.) do. do. (do.)	4.4	13.20	1	.33	.33	.20	.04	158.40	17.00	1.42	1.65	6.83	.08	**185.38**	1.48	1.48	52.80	42.62	**95.42**	280.80	**5**	**10½**	,,
1½ in. do. (11 lb.) do. do. (do.	4.4	16.13	1	.33	.33	.20	.04	193.56	17.00	1.42	1.65	6.83	.08	**220.54**	1.56	1.56	55.66	44.92	**100.58**	321.12	**6**	**8½**	,,
1½ in. do. (12 lb.) do. do. (do.)	4.4	17.60	1	.33	.33	.20	.04	211.20	17.00	1.42	1.65	6.83	.08	**238.18**	1.56	1.56	55.66	44.92	**100.58**	338.76	**7**	**0½**	,,
2 in. do. (12 lb.) do. do. (do.)	4.4	17.60	1	.33	.33	.23	.05	211.20	17.00	1.42	1.65	7.86	.10	**239.23**	1.77	1.77	63.15	50.97	**114.12**	353.35	**7**	**4½**	,,
2 in. do. (14 lb. do. do. (do.)	4.4	20.53	1	.33	.33	.23	.05	246.36	17.00	1.42	1.65	7.86	.10	**274.39**	1.77	1.77	63.15	50.97	**114.12**	388.51	**8**	**1½**	,,
2 in. do. (16 lb.) do. do.	4.4	23.47	1	.33	.33	.23	.05	281.64	17.00	1.42	1.65	7.86	.10	**309.67**	1.85	1.85	66.00	53.28	**119.28**	428.95	**8**	**11½**	,,
1½ in. lead (7 lb.) waste and fixing with cast double tacks as described. (6 ft. run of pipe taken.)	6.3	14.70	2	.67	.67	.34	.07	176.40	at 12.335 d. 24.67	2.89	3.35	11.62	.14	**219.07**	1.38	1.38	49.23	39.74	**88.97**	308.04	**4**	**3½**	,,
1½ in. do. (9 lb.) do. do. (do.)	6.3	18.90	2	.67	.67	.34	.07	226.80	24.67	2.89	3.35	11.62	.14	**269.47**	1.38	1.38	49.23	39.74	**88.97**	358.44	**4**	**11½**	,,
1½ in. do. (9 lb.) do. do. (do.	6.3	18.90	2	.67	.67	.40	.08	226.80	at 17.0d. 34.00	2.89	3.35	13.67	.17	**280.88**	1.56	1.56	55.66	44.92	**100.58**	381.46	**5**	**3½**	,,
1½ in. do. (11 lb.) do. do. (do.)	6.3	23.10	2	.67	.67	.40	.08	277.20	34.00	2.89	3.35	13.67	.17	**331.28**	1.62	1.62	57.80	46.65	**104.45**	435.73	**6**	**0½**	,,
1½ in. do. (12 lb.) do. do. (do.)	6.3	25.20	2	.67	.67	.40	.08	302.40	34.00	2.89	3.35	13.67	.17	**356.48**	1.62	1.62	57.80	46.65	**104.45**	460.93	**6**	**5**	,,
2 in. do. (12 lb.) do. do. (do.)	6.3	25.20	2	.67	.67	.46	.09	302.40	34.00	2.89	3.35	15.72	.19	**358.55**	1.84	1.84	65.65	52.99	**118.64**	477.19	**6**	**7½**	,,
2 in. do. (14 lb. do. do. (do.)	6.3	29.40	2	.67	.67	.46	.09	352.80	34.00	2.89	3.35	15.72	.19	**408.95**	1.84	1.84	65.65	52.99	**118.64**	527.59	**7**	**4**	,,
2 in. do. (16 lb.) do. do. (do.)	6.3	33.60	2	.67	.67	.46	.09	403.20	34.00	2.89	3.35	15.72	.19	**459.35**	1.90	1.90	67.79	54.72	**122.51**	581.86	**8**	**1**	,,

LEAD OVERFLOW PIPES

Description of item	Materials								Labour					Total cost			
	Lead pipe		Galv. pipe clips	Screws	Cost						Cost						
Waste allowances 10 per cent. on short lengths, 2½ per cent. on other lengths	Ft. run	lb.	Number	Dozen	Lead pipe at per lb. 12.0d. Pence	Pipe clips at each Pence.	Screws at per dozen 1.9d. Pence	Total cost of materials Pence	Plumber Hours	Mate Hours	Plumber at per hour 35.68d. Pence	Mate at per hour 28.80d. Pence	Total cost of labour Pence	Collection Pence	s.	d.	Unit
½ in. lead (2.5 lb.) overflow pipe in short lengths and fixing to brickwork as described (3 ft. run of pipe taken and labour to one bend).	3.30	2.75	—	—	33.00	—	—	**33.00**	.68	.68	24.26	19.58	**43.84**	76.84	**2**	**1½**	**per ft. run**
½ in. do. (3 lb.) do. do.	3.30	3.30	—	—	39.60	—	—	**39.60**	.68	.68	24.26	19.58	**43.84**	83.44	**2**	**4**	,,
¾ in. do. (4 lb.) do. do.	3.30	4.40	—	—	52.80	—	—	**52.80**	.75	.75	26.76	21.60	**48.36**	101.16	**2**	**9½**	,,
¾ in. do. (5 lb.) do. do.	3.30	5.50	—	—	66.00	—	—	**66.00**	.75	.75	26.76	21.60	**48.36**	114.36	**3**	**2½**	,,
1 in. do. (5.5 lb.) do.	3.30	6.05	—	—	72.60	—	—	**72.60**	.79	.79	28.18	22.75	**50.93**	123.53	**3**	**5½**	,,
1 in. do. (7 lb.) do. do.	3.30	7.70	—	—	92.40	—	—	**92.40**	.79	.79	28.18	22.75	**50.93**	143.33	**3**	**11½**	,,
1¼ in. do. (7.5 lb.) do. (3 ft. run of pipe taken, bends measured separately).	3.30	8.25	—	—	99.00	—	—	**99.00**	1.06	1.06	37.82	30.52	**68.34**	167.34	**4**	**7½**	,,
1¼ in. do. (9 lb.) do.	3.30	9.90	—	—	118.80	—	—	**118.80**	1.06	1.06	37.82	30.52	**68.34**	187.14	**5**	**2½**	,,
½ in. lead (2.5 lb.) overflow pipe and fixing in roof space as described (18 ft. run of pipe taken and labour to two bends).	18.45	15.37	7	1.17	184.44	at .75d. 5.25	2.22	**191.91**	1.60	1.60	57.08	46.08	**103.16**	295.07	**1**	**4½**	,,
½ in. do. (3 lb.) do.	18.45	18.45	7	1.17	221.40	5.25	2.22	**228.87**	1.60	1.60	57.08	46.08	**103.16**	332.03	**1**	**6½**	,,
¾ in. do. (4 lb.) do.	18.45	24.60	7	1.17	295.20	at .92d. 6.44	2.22	**303.86**	1.62	1.62	57.80	46.65	**104.45**	408.31	**1**	**10½**	,,
¾ in. do. (5 lb.) do.	18.45	30.75	7	1.17	369.00	6.44	2.22	**377.66**	1.62	1.62	57.80	46.65	**104.45**	482.11	**2**	**2½**	,,
1 in. do. (5.5 lb.) do.	18.45	33.82	7	1.17	405.84	at 1.28d. 8.96	2.22	**417.02**	1.88	1.88	67.07	54.14	**121.21**	538.23	**2**	**6**	,,
1 in. do. (7 lb.) do.	18.45	43.05	7	1.17	516.60	8.96	2.22	**527.78**	1.88	1.88	67.07	54.14	**121.21**	648.99	**3**	**0**	,,
1¼ in. do. (7.5 lb.) do. (18 ft. run of pipe taken, bends measured separately).	18.45	46.12	7	1.17	553.44	at 1.83d. 12.81	2.22	**568.47**	1.80	1.80	64.22	51.84	**116.06**	684.53	**3**	**2**	,,
1¼ in. do. (9 lb.) do.	18.45	55.35	7	1.17	664.20	12.81	2.22	**679.23**	1.80	1.80	64.22	51.84	**116.06**	795.29	**3**	**8½**	,,

TOWN AND COUNTRY PLANNING ACT, 1947

By NORMAN P. GREIG, B.A., Barrister-at-Law, F.R.San.I., F.I.Arb., etc.

11.—FINANCES OF LOCAL AUTHORITIES

AS has been previously pointed out, one of the purposes of the present Act is to assist local authorities (as defined by Section 119) in the development of land. With that end in view, provision is made for greatly increased Government grants to enable authorities to use their powers under the Act. Under the 1944 Act, provision was made for the payment of grants to local authorities for acquiring and clearing areas of extensive war damage. A revised scheme of grants is now substituted which is retrospective in regard to redevelopment schemes under the earlier Act, but also includes areas of bad layout, obsolete development and derelict areas acquired in order to bring them back into use.

No good purpose will be served by a detailed description of the provisions of Part IX, but one or two points should be noticed. By Section 93, Exchequer grants can be made to local authorities in respect of the acquisition and clearance of land in redevelopment areas, in accordance with regulations made by the Minister. Such grants are not, in the case of land acquired or appropriated for redevelopment of areas of extensive war damage, relocation of population or industry, or bringing into use derelict land, to exceed 90 per cent. of the annual costs; and in the case of areas of bad layout or obsolete development, etc., are not to exceed 80 per cent.

By Section 94 other Exchequer grants (in accordance again with regulations) can be made to local authorities and local planning authorities (i.e., councils of counties and county boroughs, and joint bodies) in regard to compensation made under Part III (Control of Development), Part VII (Special Cases) and in certain other instances specified in the Section. Here, these grants are limited to 50 per cent. of the expenditure or loss incurred. General provisions are provided in regard to grants under the above Sections, by Section 95.

Again, the Minister of Town and Country Planning is empowered to provide, by regulations, for the payment to local authorities, who were interim development authorities under the 1932 Act, of certain compensation paid before the appointed day (Section 96). By Section 97, where compensation is payable by a local authority because of any decision or Order under Part III made wholly or partly in the interest of any service provided by a Government Department and the cost of which is defrayed from moneys provided by Parliament or out of the Road Fund, then contributions can be made towards the compensation *by the Minister responsible for the administration of that service.* By Section 98, local authorities and statutory undertakers can contribute towards (a) any expenses incurred by a local planning authority in connection with the carrying out of a survey or the preparation of a development plan under Part II (see Article 1), and (b) any expenses incurred by a local planning authority, or the council of any county district, in connection with any of their functions under Part III or Part IV (Control of Development, and Acquisition of Land). Section 99 provides that county councils can direct that expenses incurred by them under the Act are to be treated as expenses for special county purposes and chargeable on such part of the county specified in the directions.

SUPPLEMENTAL PROVISIONS

Part X of the Act contains provisions which are supplementary to those contained in the earlier parts of the Act. Some of these must be noticed.

DEFAULT POWERS OF MINISTER.—By Section 100, power is given to the Minister to *direct* planning authorities to serve certain notices—i.e., (1) an enforcement notice under Section 23, or (2) a notice to be served on the owner or occupier of buildings included in the list of buildings of special architectural or historic interest (Section 30, Article 3), where unauthorised works have been done, and which requires steps to be taken to restore the building to its original state, or (3) a notice requiring proper maintenance of waste land (Section 33). The Minister can, alternatively, serve these notices himself. He also has power to direct a local planning authority to submit to him for confirmation certain other notices (e.g., tree and building preservation Orders—Article 3), or make such Orders himself.

APPLICATIONS FOR PLANNING PERMISSION, DETERMINATION OF DEVELOPMENT, CHARGES, ETC.—Section 102 provides for the making of regulations to determine the manner in which applications for planning permission are to be made to local planning authorities, and to the Central Land Board for determination of development charges. Instead of making separate applications for the above (as well as any others necessary under the Act), the Section states that the regulations are to provide for all to be made in a single document. Certain of these regulations are to be made by the Minister of Town and Country Planning and the Minister of Health.

POWERS OF ENTRY.—In order to carry out the provisions of the Act, the usual powers are given to persons authorised by either the Minister or a local planning authority to enter upon land at reasonable times in connection with the preparation of plans and the carrying out of surveys, etc. Similarly, officers of the Valuation Office are given powers of entry in regard to certain matters. It is provided, however, that such authorised person must produce his authorisation, on demand, before entering, *and has no right to enter occupied land* without giving 24 hours' notice. Section 103 further provides that in the case of entry into factories, workshops and workplaces, an "authorised person" to whom, in the course of his duty, information in regard to trade secrets or manufacturing processes is made known, must not disclose such to other people under a penalty of £100 or three months' imprisonment. If the land is damaged, following authorised entry, compensation can be recovered. Finally, the power to survey includes a power to bore and search for mineral deposits.

LOCAL INQUIRIES.—There is a general power given to the Minister by Section 104 to hold local inquiries when carrying out any of his functions under the Act.

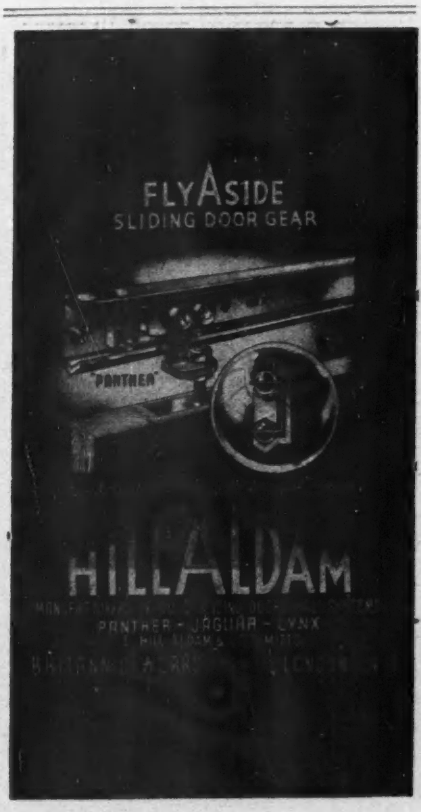
SERVICE OF NOTICES.—As is usual in Acts of Parliament, provision is made (Section 105) in regard to this matter. Briefly, service of notices is effected by (a) delivery; (b) leaving at the usual or last known place of abode; (c) sending in a stamped registered letter; (d) or, in the case of companies, etc., delivering or sending them to the secretary or clerk of the body. Further provisions are given by the Section to cover the case of notices requiring to be served on a person having an interest in the premises where the name cannot be ascertained after reasonable inquiry. In certain other cases, notice is deemed to be served by fixing it, addressed to "the owners and occupiers," conspicuously on some object on the land.

INFORMATION AS TO OWNERSHIP OF LAND.—Occupiers of land or persons receiving the rent thereof must, under Section 106, supply to the Minister, the Central Land Board, or a local authority, when requested, the nature of his interest and the names and addresses of any others whom he knows to be interested. A similar requirement is found in other Acts, and is included, obviously, in order to enable the proper authority to serve any necessary notice.

EXPENSES OF TRIBUNALS.—By Section 108, power is given to the Minister to remunerate the chairman and members of any tribunal set up under the Act as well as to pay reasonable allowances for expenses incurred. Expenditure incurred by the Minister himself, or any expenses of committees under Section 31 (advisory committees for control of advertisements), are to be defrayed from moneys provided by Parliament.

DISPUTES AS TO COMPENSATION, ETC. (Section 110).—Where such arise in regard to payment of compensation because of planning restrictions, they are to be referred to an official arbitrator appointed under the Acquisition of Land (Assessment of Compensation) Act, 1919; but disputes as to the use prevailing in the case of contiguous or adjacent land are to be determined by the Central Land Board in accordance with regulations to be made. Any party dissatisfied with the determination of the Central Land Board has a right of appeal (also in accordance with regulations) to the Minister, *whose decision is final.*

(To be continued.)



LEAD OVERFLOW PIPES

Description of item	Materials								Labour					Total cost		
	Lead pipe		Galv. pipe clips	Screws	Cost						Cost					
Waste allowances 10 per cent. on short lengths. 2½ per cent. on other lengths	Ft. run	lb.	Number	Dozen	Lead pipe at per lb. 12.0d. Pence	Pipe clips at each Pence.	Screws at per dozen 1.9d. Pence	Total cost of materials Pence	Plumber Hours	Mate Hours	Plumber at per hour 35.68d. Pence	Mate at per hour 28.80d. Pence	Total cost of labour Pence	Collection Pence	s. d.	Unit
½ in. lead (2.5 lb.) overflow pipe in short lengths and fixing to brickwork as described (3 ft. run of pipe taken and labour to one bend).	3.30	2.75	—	—	33.00	—	—	33.00	.68	.68	24.26	19.58	43.84	76.84	2 1½	per ft. run
½ in. do. (3 lb.) do. do.	3.30	3.30	—	—	39.60	—	—	39.60	.68	.68	24.26	19.58	43.84	83.44	2 4	"
¾ in. do. (4 lb.) do. do.	3.30	4.40	—	—	52.80	—	—	52.80	.75	.75	26.76	21.60	48.36	101.16	2 9½	"
¾ in. do. (5 lb.) do. do.	3.30	5.50	—	—	66.00	—	—	66.00	.75	.75	26.76	21.60	48.36	114.36	3 2½	"
1 in. do. (5.5 lb.) do.	3.30	6.05	—	—	72.60	—	—	72.60	.79	.79	28.18	22.75	50.93	123.53	3 5½	"
1 in. do. (7 lb.) do. do.	3.30	7.70	—	—	92.40	—	—	92.40	.79	.79	28.18	22.75	50.93	143.33	3 11½	"
1¼ in. do. (7.5 lb.) do. (3 ft. run of pipe taken, bends measured separately).	3.30	8.25	—	—	99.00	—	—	99.00	1.06	1.06	37.82	30.52	68.34	167.34	4 7½	"
1½ in. do. (9 lb.) do.	3.30	9.90	—	—	118.80	—	—	118.80	1.06	1.06	37.82	30.52	68.34	187.14	5 2½	"
½ in. lead (2.5 lb.) overflow pipe and fixing in roof space as described (18 ft. run of pipe taken and labour to two bends).	18.45	15.37	7	1.17	184.44	at .75d. 5.25	2.22	191.91	1.60	1.60	57.08	46.08	103.16	295.07	1 4½	"
½ in. do. (3 lb.) do.	18.45	18.45	7	1.17	221.40	5.25	2.22	228.87	1.60	1.60	57.08	46.08	103.16	332.03	1 6½	"
¾ in. do. (4 lb.) do.	18.45	24.60	7	1.17	295.20	at .92d. 6.44	2.22	303.86	1.62	1.62	57.80	46.65	104.45	408.31	1 10½	"
¾ in. do. (5 lb.) do.	18.45	30.75	7	1.17	369.00	6.44	2.22	377.66	1.62	1.62	57.80	46.65	104.45	482.11	2 2½	"
1 in. do. (5.5 lb.) do.	18.45	33.82	7	1.17	405.84	at 1.28d. 8.96	2.22	417.02	1.88	1.88	67.07	54.14	121.21	538.23	2 6	"
1 in. do. (7 lb.) do.	18.45	43.05	7	1.17	516.60	8.96	2.22	527.78	1.88	1.88	67.07	54.14	121.21	648.99	3 0	"
1¼ in. do. (7.5 lb.) do. (18 ft. run of pipe taken, bends measured separately).	18.45	46.12	7	1.17	553.44	at 1.83d. 12.81	2.22	568.47	1.80	1.80	64.22	51.84	116.06	684.53	3 2	"
1½ in. do. (9 lb.) do.	18.45	55.35	7	1.17	664.20	12.81	2.22	679.23	1.80	1.80	64.22	51.84	116.06	795.29	3 8½	"

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"FLUID-GLASS" TREATMENT FOR LINOLEUM.

To Whom it may concern. 17th Sept. 1948

Dear Sir(s),

SCHOOLS—WOOD BLOCK FLOORING

Hitherto the Ministry of Education, owing to their comparatively small allocation of hardwoods, have been able to authorize the use of hardwood block or strip floorings only for Assembly Halls, using other types of flooring for classrooms. Inasmuch as, in our opinion, the only really serviceable and hard-wearing floor suitable for classrooms is a wood block floor, and having been able to secure a fairly large quantity of reclaimed hardwoods and slabs and off cuts (which Timber Control agrees as outside allocation), we have pointed out to the Ministry that this material is available for their use. The Department has now agreed to withdraw the ban on the use of hardwood block flooring for classrooms, and circulars to this effect have been issued to Local Authorities. We invite enquiries for these floors from the Home Counties and the South, and orders will be accepted and executed in rotation until supplies are exhausted. The thickness of the hardwoods referred to in either strip or block is 1 inch nominal, finishing $\frac{13}{16}$ inch.

Blocks manufactured from reclaimed hardwoods can also be laid in Buildings other than Schools. Timber Control (Consumers) licences are readily granted and we can assist in this respect.

Should you have wooden floors that are badly worn, we can clean off, reface and wax-polish, using electrically- or petrol-driven surfacing machines.

Hitherto we have not tendered for composition floorings, as we did not consider the synthetic magnesite (manufactured from sea-water) suitable for this class of flooring. Now, however, that we can obtain the genuine imported mineral magnesite, we are able to give the 100 per cent. guarantee that clients are entitled to, and shall be happy to submit quotations for this type of flooring. It is obtainable in red, brown and/or buff.

Yours faithfully,
The Philip Flooring Company.

P.D.Philip.

(For 39 years connected with Messrs. Jos. F. Ebner, Ltd.)

P.S. HOUSING. We have been fortunate enough to secure a large parcel of reclaimed softwood from which we have manufactured some thousands of yards of $\frac{3}{4}$" tongued and grooved flooring blocks. These can be used for floorings over and above the statutory I.6 standards of softwood per house, and we have the permission of the Ministry of Health to lay such floors. We shall be glad to submit quotations for these floorings laid complete and orders well be executed in rotation until the materials are exhausted.

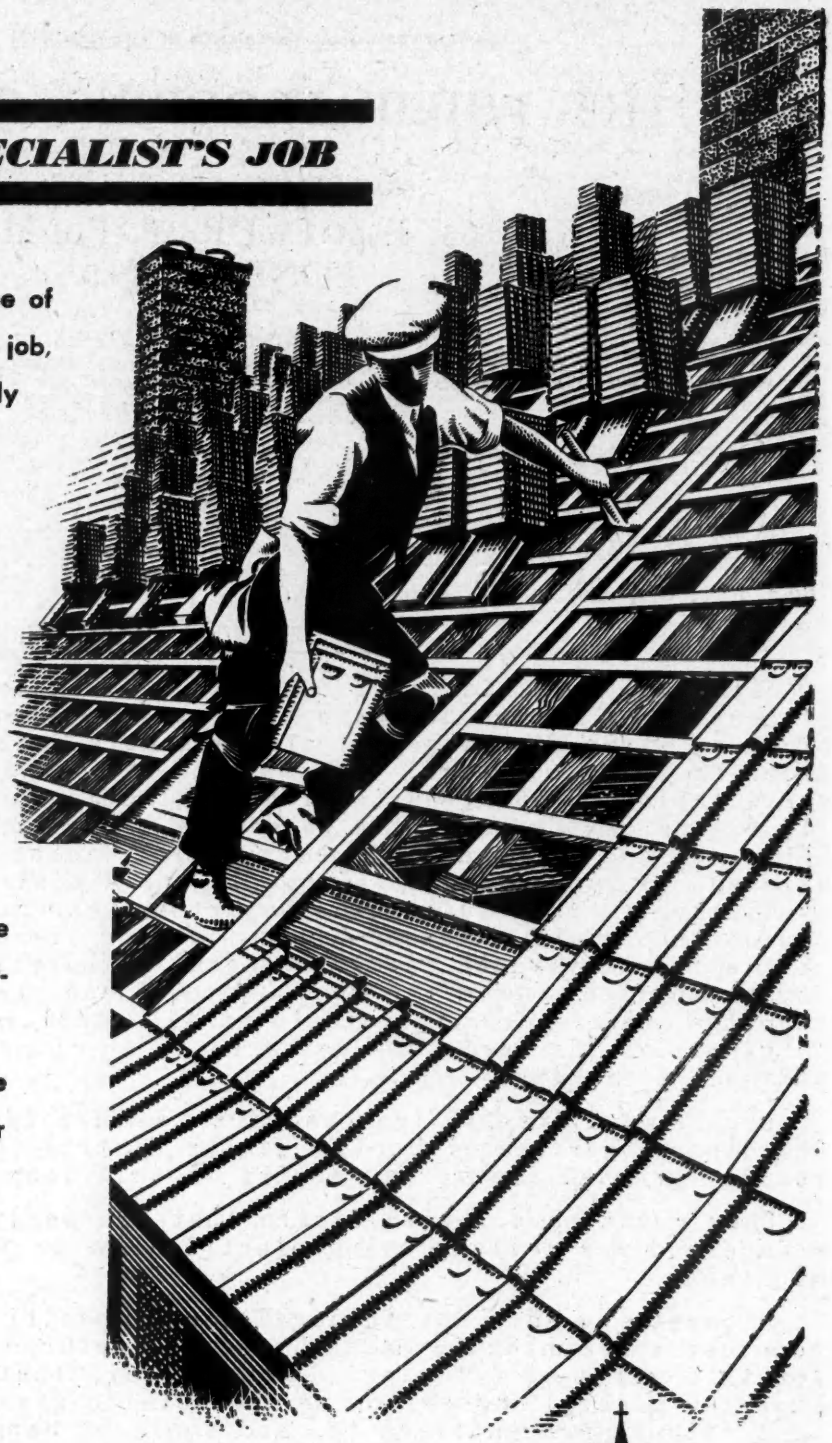
ROOFING IS A SPECIALIST'S JOB

The laying of the Courtrai type of tile as illustrated is a specialist's job, for if the tiles are laid too closely the tails of the tiles are apt to "ride up" on the windstops.

If, on the other hand, they are laid at too wide a gauge appearance is spoilt and head-lock protection is reduced.

The vertical rolls must likewise be in alignment or weather-tightness may be lost.

This is one more example of the necessity for entrusting all your roofing to specialists.



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TOWN AND COUNTRY PLANNING ACT, 1947

By NORMAN P. GREIG, B.A., Barrister-at-Law, F.R.San.I., F.I.Arb., etc.

11.—FINANCES OF LOCAL AUTHORITIES

AS has been previously pointed out, one of the purposes of the present Act is to assist local authorities (as defined by Section 119) in the development of land. With that end in view, provision is made for greatly increased Government grants to enable authorities to use their powers under the Act. Under the 1944 Act, provision was made for the payment of grants to local authorities for acquiring and clearing areas of extensive war damage. A revised scheme of grants is now substituted which is retrospective in regard to redevelopment schemes under the earlier Act, but also includes areas of bad layout, obsolete development and derelict areas acquired in order to bring them back into use.

No good purpose will be served by a detailed description of the provisions of Part IX, but one or two points should be noticed. By Section 93, Exchequer grants can be made to local authorities in respect of the acquisition and clearance of land in redevelopment areas, in accordance with regulations made by the Minister. Such grants are not, in the case of land acquired or appropriated for redevelopment of areas of extensive war damage, relocation of population or industry, or bringing into use derelict land, to exceed 90 per cent. of the annual costs; and in the case of areas of bad layout or obsolete development, etc., are not to exceed 80 per cent.

By Section 94 other Exchequer grants (in accordance again with regulations) can be made to local authorities and local planning authorities (i.e., councils of counties and county boroughs, and joint bodies) in regard to compensation made under Part III (Control of Development), Part VII (Special Cases) and in certain other instances specified in the Section. Here, these grants are limited to 50 per cent. of the expenditure or loss incurred. General provisions are provided in regard to grants under the above Sections, by Section 95.

Again, the Minister of Town and Country Planning is empowered to provide, by regulations, for the payment to local authorities, who were interim development authorities under the 1932 Act, of certain compensation paid before the appointed day (Section 96). By Section 97, where compensation is payable by a local authority because of any decision or Order under Part III made wholly or partly in the interest of any service provided by a Government Department and the cost of which is defrayed from moneys provided by Parliament or out of the Road Fund, then contributions can be made towards the compensation *by the Minister responsible for the administration of that service.* By Section 98, local authorities and statutory undertakers can contribute towards (a) any expenses incurred by a local planning authority in connection with the carrying out of a survey or the preparation of a development plan under Part II (see Article 1), and (b) any expenses incurred by a local planning authority, or the council of any county district, in connection with any of their functions under Part III or Part IV (Control of Development, and Acquisition of Land). Section 99 provides that county councils can direct that expenses incurred by them under the Act are to be treated as expenses for special county purposes and chargeable on such part of the county specified in the directions.

SUPPLEMENTAL PROVISIONS

Part X of the Act contains provisions which are supplementary to those contained in the earlier parts of the Act. Some of these must be noticed.

DEFAULT POWERS OF MINISTER.—By Section 100, power is given to the Minister to *direct* planning authorities to serve certain notices—i.e., (1) an enforcement notice under Section 23, or (2) a notice to be served on the owner or occupier of buildings included in the list of buildings of special architectural or historic interest (Section 30, Article 3), where unauthorised works have been done, and which requires steps to be taken to restore the building to its original state, or (3) a notice requiring proper maintenance of waste land (Section 33). The Minister can, alternatively, serve these notices himself. He also has power to direct a local planning authority to submit to him for confirmation certain other notices (e.g., tree and building preservation Orders—Article 3), or make such Orders himself.

APPLICATIONS FOR PLANNING PERMISSION, DETERMINATION OF DEVELOPMENT, CHARGES, ETC.—Section 102 provides for the making of regulations to determine the manner in which applications for planning permission are to be made to local planning authorities, and to the Central Land Board for determination of development charges. Instead of making separate applications for the above (as well as any others necessary under the Act), the Section states that the regulations are to provide for all to be made in a single document. Certain of these regulations are to be made by the Minister of Town and Country Planning and the Minister of Health.

POWERS OF ENTRY.—In order to carry out the provisions of the Act, the usual powers are given to persons authorised by either the Minister or a local planning authority to enter upon land at reasonable times in connection with the preparation of plans and the carrying out of surveys, etc. Similarly, officers of the Valuation Office are given powers of entry in regard to certain matters. It is provided, however, that such authorised person must produce his authorisation, on demand, before entering, *and has no right to enter occupied land* without giving 24 hours' notice. Section 103 further provides that in the case of entry into factories, workshops and workplaces, an "authorised person" to whom, in the course of his duty, information in regard to trade secrets or manufacturing processes is made known, must not disclose such to other people under a penalty of £100 or three months' imprisonment. If the land is damaged, following authorised entry, compensation can be recovered. Finally, the power to survey includes a power to bore and search for mineral deposits.

LOCAL INQUIRIES.—There is a general power given to the Minister by Section 104 to hold local inquiries when carrying out any of his functions under the Act.

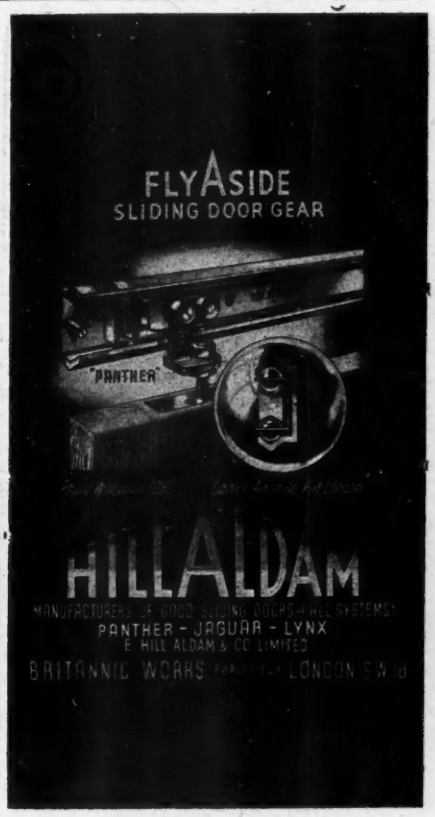
SERVICE OF NOTICES.—As is usual in Acts of Parliament, provision is made (Section 105) in regard to this matter. Briefly, service of notices is effected by (a) delivery; (b) leaving at the usual or last known place of abode; (c) sending in a stamped registered letter; (d) or, in the case of companies, etc., delivering or sending them to the secretary or clerk of the body. Further provisions are given by the Section to cover the case of notices requiring to be served on a person having an interest in the premises where the name cannot be ascertained after reasonable inquiry. In certain other cases, notice is deemed to be served by fixing it, addressed to "the owners and occupiers," conspicuously on some object on the land.

INFORMATION AS TO OWNERSHIP OF LAND.—Occupiers of land or persons receiving the rent thereof must, under Section 106, supply to the Minister, the Central Land Board, or a local authority, when requested, the nature of his interest and the names and addresses of any others whom he knows to be interested. A similar requirement is found in other Acts, and is included, obviously, in order to enable the proper authority to serve any necessary notice.

EXPENSES OF TRIBUNALS.—By Section 108, power is given to the Minister to remunerate the chairman and members of any tribunal set up under the Act as well as to pay reasonable allowances for expenses incurred. Expenditure incurred by the Minister himself, or any expenses of committees under Section 31 (advisory committees for control of advertisements), are to be defrayed from moneys provided by Parliament.

DISPUTES AS TO COMPENSATION, ETC. (Section 110).—Where such arise in regard to payment of compensation because of planning restrictions, they are to be referred to an official arbitrator appointed under the Acquisition of Land (Assessment of Compensation) Act, 1919; but disputes as to the use prevailing in the case of contiguous or adjacent land are to be determined by the Central Land Board in accordance with regulations to be made. Any party dissatisfied with the determination of the Central Land Board has a right of appeal (also in accordance with regulations) to the Minister, *whose decision is final.*

(To be continued.)



"THE ARCHITECTS' COMPENDIUM"

THE 62ND EDITION

SPECIAL features in the recently published 62nd edition of "The Architects' and Builders' Compendium" include an illustrated article by Mr. Richard Sudell, F.I.L.A., on "The Contribution of the Landscape Architect," which emphasises the important and valuable part landscape architects can play in the building of the new towns and in the post-war development of the country. A new section gives the names and addresses of all the qualified members of the Institute of Landscape Architects. Another valuable illustrated article is "Concrete Control," by Dr. L. J. Murdock, Ph.D., M.Sc., A.M.I.C.E., who gives a detailed description of the control and supervision the concrete engineer must exercise when engaged in construction for high-class structures.

A useful chapter is that which provides a comprehensive explanation of the revised scheme for the priority distribution of building materials and components. Another new feature is the complete schedule of rates and conditions controlling the hire of plant, which came into effect last April.

Permanent sections of the Compendium which have been thoroughly revised are the address register of architects; the address register of qualified quantity surveyors; the selected register of builders; building regulations and controls; the legal section, contributed by Mr. Norman P. Greig, B.A., Barrister-at-Law; technical data, by Messrs. Crosher and James, chartered quantity surveyors; and manufacturers' and suppliers' announcements, a guide to available building materials and manufactured products.

The book is obtainable, price £2 2s., from the Compendium Publishing Co., 93, Chancery-lane, W.C.2.

MR. BEVAN'S ARITHMETIC

CHALLENGE BY MR. MARPLES

ON December 19, 1947, in the House of Commons, Mr. Bevan said: "We have built in the first two and a half years at the end of this war more houses than were built in ten years at the end of the 1914-18 war." This statement was quoted by Mr. Ernest Marples, M.P., at the Rational Hall, Ebbw Vale, on September 11. He continued as follows:—

In fact, 1,194,720 houses were built in the 10 years after the 1914-1918 war (Hansard, February 11, 1948), and only 372,769 in the 2½ years after this war (Official Housing Return, February 29, 1948). To score a debating point, the building of 821,951 houses has been "invented" by the cabinet minister responsible for housing the people of these islands. I challenged Mr. Bevan in the House of Commons on the 14th July about his statement, and gave references. There was no reply. My challenge was renewed in a speech at Wallasey on July 24, when I offered to give £500 to a charity if his statement were proved true, providing he would do the same if it were proved false. Still no reply.

So now, at a public meeting in his own constituency, the challenge is renewed in the hope that this ebullient and eloquent Welshman can find his tongue and speak a word or two on his mythical 821,951 houses. To-day, my cheque for £500 has been sent to the *Daily Herald* with a request that the Editor should either act as an arbitrator or appoint an independent person to arbitrate on the narrow issue of the truthfulness of Mr. Bevan's statement.

D.S.I.R. PUBLICATIONS

WORK STUDY IN BLOCKLAYING

THE twenty experimental houses at Abbots Langley, in which heating experiments are now being carried out, were used for an important investigation during building. The effect on the speed of building of using blocks and bricks of different dimensions and weights was studied under practical conditions. Full details are given in "National Building Studies—Technical Paper No. 1—A Work Study in Blocklaying," published for the Department of Scientific and Industrial Research by H.M. Stationery Office, price 1s. 6d., by post 1s. 8d.

The reason for this experiment was the modern development of blocks capable of speedier laying yet with functional characteristics at least as favourable as the traditional brick. Nine different methods of construction were investigated. Although the choice of examples was limited by practical considerations, the blocks used were typical of those already in use in the building industry. They did not include all the known types, nor were those selected for test necessarily the optimum sizes and weights for their respective classes. The units used included bricks and blocks employing one hand, blocks requiring both hands and blocks requiring two men to handle.

The data given in the report were obtained from a close study of the blocklaying. The individual bricks and blocks were studied over the major part of each house, while separate time recordings were made of the unit elements, spreading mortar, plumbing, cutting bricks, etc., the total number of readings approaching a quarter million. Times were recorded continuously throughout the working day over a period of six months. A statistical analysis of the data has shown that for most of the houses the experimental error was less than plus or minus 5 per cent. (based on a 99 per cent. confidence limit). This was an important conclusion, as a test of the method was an integral part of the experiment.

The results of the experiments were well defined and showed that wide variation in work consumption occurred for the various types of blocks. The slowest, the common bricks, took about four times as long as the equivalent volume of large concrete blocks. The results also suggest that, for a one-man lift, but little saving in time can result from further increase in block size beyond the 12 brick equivalent. Any further increase would necessitate a second man to lift.

An analysis shows that the bricklaying costs are unrelated to the total cost of wall building since the present high cost of concrete blocks more than offsets the saving in labour in most cases. This might well be otherwise if the concrete blocks were manufactured in quantities comparable with the products of the larger brick organisations. Moreover, the comparison will be more favourable to concrete blocks in those areas where brick prices are higher in relation to concrete than those obtaining in the fletton area where the present test was made.

A study was also made of the distribution of time among the various elements of work involved in bricklaying and blocklaying. The results have been instructive, firstly in explaining the sources of the time differences observed between the respective blocks and, secondly, in showing the relative magnitude of the jobs occurring incidentally to the bricklaying proper, such as measuring, plumbing, cutting bricks, and erecting doors and windows. The latter may prove of value in assessing the worthwhileness of pursuing certain projects aimed at eliminating or reducing the incidental elements of work.

The labour utilisation on the site was low, although comparable with much of the present-day output, the non-productive time being much in excess of productive time. Moreover, the greater part of non-productive time was avoidable. A high rate of bricklaying was obtained during periods of working, but the non-productive intervals were too long and too frequent. As a corollary it may be said that while economy should be forthcoming from improvements in the methods, the greater and more immediate saving must come from the eradication of much of the non-productive time.

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PLUMBING IN AMERICA.

The record of a visit undertaken by an officer of the Building Research Station for the purpose of studying modern plumbing practice and research in the U.S.A. and Canada, is given in "National Building Studies—Special Report No. 2—Plumbing in America," published for the D.S.I.R. by H.M. Stationery Office, price 6d., by post 7d. The field of study includes domestic drainage, disposal pipework above ground, water supply, appliances and fittings, materials, prefabrication and some architectural aspects of plumbing.

One of the strongest impressions of the tour was of the extent to which contamination of drinking water due to cross connections and back-siphonage into water lines has arisen and received attention in America in recent years. This subject is treated in some detail and a few lessons for British plumbing practice are drawn. Interesting developments arising from research in the design of above-ground disposal systems (with special reference to "anti-siphonage," ventilation and pipe-sizing) have been taking place in America in recent years. This work and some of the problems involved in it are discussed.

In the section on plumbing materials it is noted that pitch fibre is now usually

accepted in the U.S.A. and Canada for underground drainage pipes up to 8-in. diameter. The one-pipe system of plumbing leads, in American practices, to a simple and more economical layout of underground pipes than is usually possible with our two-pipe plumbing.

Some differences between American and British plumbing appliances and fittings are instructive. The superior flushing of American closet pans merits attention. The choice, in American practice, between flushing valves and flushing cisterns for closets is usually: cisterns for housing, valves for the larger buildings. Sanitary equipment in public toilet rooms is often of a higher standard than in this country.

American experience in prefabricated plumbing appears to have been much the same as our own. For most repetition housing over there "partial prefabrication" seems to be generally accepted as the most economical and practicable method.

Because of the severity of winters in America, soil stacks in that country are located inside buildings, whereas in Britain they are normally placed outside in order to give greater safety in the event of a leakage. Some trouble has occurred in America due to leakages from internal soil stacks but practically no anxiety is felt about them in modern buildings in view of present-day standards of plumbing labour.

ROAD SAFETY

A PAPER ON PUBLIC LIGHTING

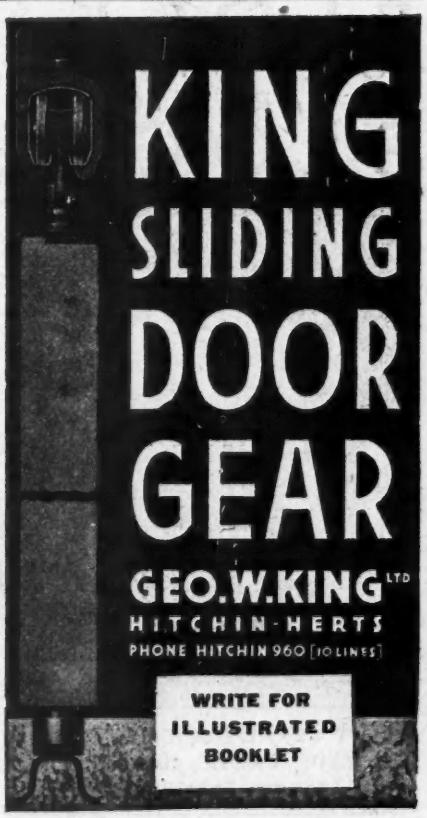
A SUGGESTION that light-coloured stone should be used for new buildings on main traffic routes in built-up areas was made by MR. CHARLES N. MELTON, in a paper on "Safety-First On the Highways, with Special Reference to Public Lighting," which he read at the recent annual conference of the Association of Public Lighting Engineers, at Eastbourne. It was now generally realised, he said, that the background formed an important part of the motorist's field of view, and modern types of lanterns were designed to ensure its adequate lighting. A survey of every district was advisable to locate all places where benefits might be obtained by the use of light backgrounds.

Following is a summary of the speaker's remarks:

Safety on the roads is dependent chiefly on the ability of the road user to see clearly all objects, whether still or moving, in the path of travel, and what is more important, on the ability to see them in sufficient time to appreciate fully all the conditions involved and decide on what action, if any, is necessary. For safety at night a lighting installation must be a design for seeing. For reasons of economy we are limited to the use of comparatively low values of illumination for lighting our roads, and it has become generally accepted that the most effective method of utilising these low values is by means of careful control and projection of the light in order to exploit the reflective properties of the road surface and produce a high background brightness against which objects can be seen as silhouettes. Silhouette vision can only be effective provided that there is a sufficient length of roadway in the field of view in order to provide the necessary background against which objects of a height of, say, three feet, can be completely observed, and for conditions of complete safety this length will of necessity vary according to the speed of travel of the observer, taking into account such factors as braking distance and reaction time. In many built-up areas traffic conditions will, of necessity, vary considerably according to the time of day, so that silhouette vision may be adequate for the major part of the night but direct vision may be called for over a comparatively short period. A traffic census for any area would give a good guide to the actual safety requirements, and whether the conditions just referred to do apply, in which case the provision of a special supplementary lighting scheme, possibly in the form of additional lanterns for use over a short period, would be worthy of consideration.

During the winter months, when lighting is in use from an early time in the evening when the local traffic is still fully in commission, alternative routes, with which local traffic is familiar, may tend to be avoided owing to the greater attraction of the higher intensities in the main routes. These routes should be provided with an intensity of illumination which, though not calling for as great a cost as the main route systems, would be sufficient to maintain their attraction as an alternative route by night as well as by day. In this way it might be possible to produce safer travelling conditions on the main routes by a reduction in the traffic density. Particulars of all accidents during the hours of lighting would give a guide as to where special considerations are necessary, in the event of such accidents being attributed to inadequate lighting.

The application of silhouette vision brings into notice a feature which may be a source of considerable danger, namely, disability glare. This glare is dependent on such a variety of factors that it is difficult to obtain by calculation alone a really good idea of the true effect on visibility. Important factors in such calculations are the angle between the line of sight and a line drawn from the eye to the light source, and the candle-power intensity directed towards the eye. By careful consideration of these factors the glare may be reduced to a minimum. Some degree of glare is almost certain to be present in a lighting installation, as economic reasons limit methods for its reduction. The technical features of the fluorescent lamp appear to be ideally suited to assist in fighting the glare problem. It is suggested that the application of polarised light might be further developed for use with all headlights. If all vehicles could have this idea incorporated in the standard lighting equipment a useful contribution to road safety would be made.



Uniformity in Lighting.

The greatest danger occurs where the built-up area ends and the open country begins, as this is often the point where lighting entirely ceases. Changes in the colour of the lighting in various installations along a common traffic route do not constitute as serious a menace but this feature would be better avoided. In certain cases confliction with the railway signals has compelled the adoption of a type of light source different in colour (and very often in intensity) from that used in the main part of the installation, in order to avoid the excessive screening which would be necessary if the original lamps were retained. In this connection it would be interesting to know whether this trouble could be avoided by the application of polarising materials from the point of view of the railway, leaving road traffic unaffected. As the Ministry of Transport is now also the central authority for street lighting, it is to be sincerely hoped that more attention will be given to this question of uniformity of lighting so that this, together with a high degree of co-operation between local authorities, will combine to prevent a continuance of these deplorable conditions.

On straight sections of roadway, the presence of trees mounted in a continuous line along the edge of the footpath almost entirely prevents the latter from being visible to traffic on the road. If trees are to be considered as essential to public amenity, they should be placed at the rear of the footpath, or their use should be confined to those footpaths whose width will allow the trees to be set back well clear of the kerb line. An additional advantage gained by attention to this point is that it obviates the need for the adoption of centrally suspended systems of lighting which are sometimes made essential by the excessive leafage which would entirely obscure kerb mounted lighting units.

The speaker went on to discuss the need for a rigid control of the illumination of traffic signs and guard posts on island refuges and suggested that a British Standard Specification for this class of lighting would be of great assistance to the user and manufacturer of the equipment. After referring to the importance of an adequate system of lighting of pedestrian crossings and a good standard of equipment maintenance, he said that it was obvious that no matter what regulations, recommendations and specifications were produced, they could only be of limited use unless the principles involved were fully understood and applied by competent people.

During the conference other papers were read by their authors on "Unidirectional Lighting of Double Carriageway and One-way Roads," "One Hundred Years of Research and Development in Electric Light," "The Basic Principles in the Design of Street Lighting Installations and their Practical Application," and "Street Lighting in the Vicinity of Aerodromes."

ECONOMY IN STRUCTURAL STEEL

REVISED BRITISH STANDARD

In Circular 157/48 the Minister of Health emphasises the present need to exercise the maximum economy in the use of steel for structural work and points out that local authorities can render invaluable help in this. Most bye-laws now in force require that the steel framework of any new building shall be sufficiently stable and adequately protected against fire, but there is an additional provision that any framework which complies with B.S.S. 449-1937 shall be deemed to satisfy the criteria as to stability. The specification is not imposed as an absolute requirement but is inserted as a guide to local authorities in administering their bye-laws and to applicants in preparing their proposals.

The circular continues: That specification has now been revised by the British Standards Institution. The new edition contains a number of amendments designed to curtail all unnecessary expense of steel while maintaining a standard which ensures proper stability: in particular the basic permissible stress for structural steel is increased from 8 to 9 tons per square inch, and the flexual stress to 10 tons per square inch. The revised specification has been accepted by the local authority associations represented on the Committee of the British Standards Institution.

The Minister will, if any local authority so wishes, confirm an amending bye-law substituting the new specification for the old one. But as the latter is not a formal bye-law requirement he does not think it necessary to do so until the bye-laws themselves are revised. All that is required is that local authorities should accept proposals complying with the new specification as satisfying their bye-laws in this respect. It is of the first importance that the B.S.S. 449-1948 should secure immediate and general acceptance.

Provision must, however, be made to ensure that existing stocks of steel which have been manufactured to the earlier specification, B.S.S. No. 15 of 1936, can be used until they are exhausted.

The new specification, B.S.S. No. 449 of 1948, provides, in paragraph 3, that steel used for construction in accordance with that specification shall comply with B.S.S. No. 15 of 1948. In order to permit of the use of existing stocks the Minister trusts that local authorities will accept steel which complies with B.S.S. No. 15 of 1936 for use in construction in accordance with the new B.S.S. No. 449 of 1948, wherever they are satisfied that the general requirements of their bye-laws as to stability, etc., are thereby satisfied. . . .

The Minister should be informed of any important instances in which applicants for bye-law consent submit proposals based on lower permissible stresses than those prescribed in the new Standard Specification, in order that he may consider with the British Standards Institution what further measures may be necessary to bring the revision to the notice of the architectural and engineering professions and the building industry.

Employment in the Building Industry.

The total number of persons employed in the building industry during July was 1,377,000. This showed an increase of 2,000 on the figure for June and 67,000 on the figure for the middle of 1939.

NEWS IN BRIEF

A Directorial Appointment.

Colonel A. R. Mais, O.B.E., T.D., B.Sc., has joined the board of Messrs. Trollope and Colls, Ltd. Colonel Mais was responsible for the reconstruction and extensions of the Persian Railways and Port Installations, 1941-42; for the Hydrographical Survey and construction of the "whale" piers to the Mulberry Harbour, Normandy, 1944; and the reconstruction and operating of the ports of Dieppe and Antwerp, before becoming Deputy Director-General, Ports and Waterways in Germany in 1945. Prior to 1939 and since demobilisation in 1946, Colonel Mais has been in private practice as a quantity surveyor.

School of Building.

The Education Department of the L.C.C. point out that they recently issued erroneous statements relating to the Brixton School of Building. The date of commencement of classes will be September 27, and the dates of enrolment are September 20-24.

"More Employers than Bricklayers."

A suggestion that the building industry should be reorganised if cheaper houses were wanted was made at the Trades Union Congress at Margate last week by Mr. W. Elsmere (London), of the Amalgamated Union of Building Trade Workers.

"Let us have a reorganisation of the building industry and you might get the houses you want cheaper and more economically than was done in the past," he said. "The building worker is interested in what is in his packet and what it will buy. You cannot divorce the question of what is being produced from what a man is going to get in return. The building industry is so profitable that it can carry more employers than there are bricklayers in our society."

A Coventry Craftsman.

A lifetime of experience and devotion to his craft is being put into the repair of the fabric of St. Osburg's Roman Catholic Church, Hill-street, Coventry, by Mr. John Forbes, 74-year-old stonemason, who has followed his craft for 60 years. Despite his age, he still maintains enthusiasm for his work and is proud to state: "The job's the thing; I love it, and live for it." Mr. Forbes says he is still learning in his trade.

Coventry City Centre.

The Coventry Planning and Redevelopment Committee have now been advised that their plan for reconstructing five blocks of shops, etc., in the city centre has been accepted and work will begin on January 1 next year. While this building programme is under way, consideration will be given to the next phase of development, which will involve the erection of further buildings along the shopping precinct and the intersecting street.

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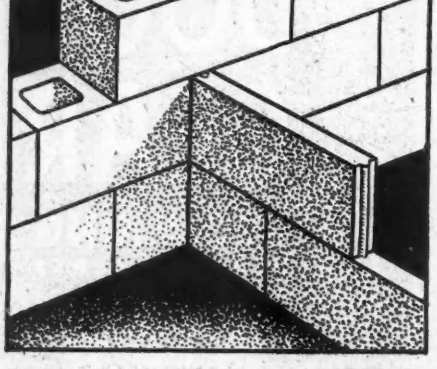

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TRADE NEWS

Paints at British Exhibition.

Messrs. Jenson and Nicholson, Ltd., of Jenson House, Carpenter's-road, Stratford, E.15, will be showing a comprehensive range of Robbialac decorative paints, varnishes and enamels, together with a representative range of Jenson and Nicholson industrial finishes, at the British Exhibition, which opens at Copenhagen on September 18. Their stand will be No. 160 in the exhibition buildings at Forum.

Street Lighting.

The basic theories of street lighting have changed very little in the past 16 years, although there have been many improvements both in lamps and lanterns, as is shown in a booklet on "Street Lighting" published by the G.E.C. Co., Ltd., Magnet House, Kingsway, W.C.2. The book contains details of G.E.C. lanterns and photographs showing some of them in use.

New Inserts for Concrete.

Kilcoin and Partners, Ltd., have issued a leaflet on their Pak-Inserts which are used instead of wood for making fixtures to concrete. Pak-Inserts, which consist of a semi-plastic material, moulded or extruded in any suitable and workable size or shape are positioned in the mould or on the shuttering of the concrete; and it is claimed that, being of a mineral nature and having approximately the same coefficient of expansion, they bond perfectly with the concrete. Once cast in the concrete, their holding power remains unaffected by damp and heat. Yet they can be treated like wood—*i.e.*, fixtures can be made to them with the minimum of trouble and the maximum of security. Obviously, not all the positions of fixtures in a house can be predetermined; but many can—such as, for example, window and door frames, light switches, wash basins, stair treads, and (to concrete beams) ceiling boards and wooden floors, and (in certain types of construction) the actual cladding of concrete slabs to the steel framework of the building. The makers claim that the use of this method brings about a monetary saving in the region of 8d. a hole for a No. 8 or No. 10 screw, which, working on a reasonable minimum basis of 1,000 fixtures per house, amounts to over £33 per house. If necessary, inserts of a special size and shape can be manufactured.

THE SCOTTISH BUILDER

NEW BUILDINGS

East Kilbride.—At Maxwell-st. and Whitecross-rd., 64 houses to be erected, for which the architect is Lockhart Hutson, 119, Cadzow-st., Hamilton.

Edinburgh.—Lamont & Co., Ltd., to have £50,000 extension carried out at their works from plans by G. Walls, 45, Hanover-st., Edinburgh.

Glasgow.—New schools to be erected at Pollock and Priesthill, for which the architect is John MacNab, 129, Bath-st., Glasgow.

Glasgow.—New school buildings proposed at the Lawmuir Agricultural College, for which the architect is J. MacNab, 129, Bath-st., Glasgow.—Extensions proposed to Bridgeton Transport Garage, for which the architect is Magnus Duncan, 243, Eglinton-st., Glasgow.

Lanarkshire.—Alterations and additions to Port Dundas premises to be carried out by the Scottish Agricultural Industries, Ltd., Bothwell-st., Glasgow.

Tannockside.—Additions and alterations, also new garage, for Colville, Ltd., to be constructed from plans by Cowie & Miller, Cleland-rd., Wishaw.

FUTURE CONSTRUCTION

PUBLIC APPOINTMENTS

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

SEPTEMBER 21.

†***Derby C.B.**—One pair of police houses and office at Wood-rd., Chaddesdon. T. W. East (F.), Boro' A., Council House. Dep. £2 2s. Tenders by October 19.

SEPTEMBER 23.

†***Folkestone T.C.**—36 houses, contract "C," at Horn-st. B.E. Dep. £3 3s.

SEPTEMBER 24.

†***Cheshunt U.D.C.**—56 houses at Bury Green estate. Clifford, Tee & Gale, architects, Moorgate Hall, 153, Moorgate, E.C.2. Dep. £2 2s.

†***Upton-on-Severn R.D.C.**—8 houses at Severn Stoke. Pemberton & Bateman (F. & A.), 21, Vine-st., Evesham. Dep. £2 2s. Tenders by October 8.

SEPTEMBER 25.

†***North Riding C.C.**—11 police houses at 5 sites. J. Catchpole (A.), County A., County Hall, Northallerton. Dep. £2 2s.

SEPTEMBER 27.

Cemaes.—8 houses with roadway, etc., at Crymmych Village, Pembs. C., 26, Quay-st., Cardigan. Dep. £3.

Clacton U.D.C.—8 houses at North-rd., including preparation of site, etc. E. & S., Town Hall. Dep. £2 2s.

Daventry R.D.C.—22 houses at 4 sites. H. Bonsor, S., 44, High-st. Dep. £3 3s.

Haverfordwest T.C.—24 houses at Priory site. B.S., 9, Victoria-pl., Haverfordwest. Dep. £2 2s.

†***Romford T.C.**—20 houses at Pammar-ave., Paddock estate. A. S. Wilson & Partners, chartered quantity surveyors, 8, Princes-st., Storey's-gate, Westminster, S.W.1. Dep. £2 2s.

Tipton T.C.—32 houses at Upper Church-la. estate. B.S. Dep. £2 2s.

Watford R.D.C.—14 houses at Phillimore-pl., Radlett. C., Council Offices, Wynyard House, Langley-rd. Dep. £1 1s.

Weymouth and Melcombe Regis T.C.—30 bungalows at Westhaven estate, Abbotsbury-rd. B.E. & S., 6, Pulteney-bldgs. Dep. £2 2s.

***Willinghall U.D.C.**—4 houses at Bilston-la. E. & S., Town Hall. Dep. £2 2s.

SEPTEMBER 28.

***Bedworth U.D.C.**—6 houses at Black Horse-rd. E. & S., 134, Newtown-rd. Dep. £1 1s.

Derby T.C.—Extensions and alterations at "Spread Eagle" Inn, Burnaston. Boro' A., Council House. Dep. £2 2s.

Doncaster C.B.—92 houses at Clay-la. estate. Estates S., 15, South Parade. Dep. £3 3s.

Ilford B.C.—10 houses at Lexden-dr., Barley-la. B.E. & S. Dep. £4 4s.

Monmouthshire C.C.—5 police houses at Dixton-rd. County A., Queen's Hill, Newport. Dep. £1 1s.

Stratford-on-Avon T.C.—20 houses at Clopton housing estate. B.E., Municipal Offices. Dep. £2 2s.

SEPTEMBER 29.

Dorchester R.D.C.—10 houses at Abbotsbury. F. E. Jay, 58, High West-st., Dorchester. Dep. £2 2s.

SEPTEMBER 30.

Abergavenny T.C.—28 houses at Llwynu Farm site. B.E. & S., Town Hall. Dep. £2 2s.

Berks C.C.—Erection of County Primary School at Sutcliffe-ave. estate, Woodley. County A., 35, Bath-rd., Reading. Dep. £2 2s.

Caernarvon T.C.—48 houses at Maes Barcer. B.E. & S., Guild Hall. Dep. £2 2s.

***Durham County Police Authority.**—One pair of police houses at Hall-la. estate, Willington. County A., Court-la.

***Gellygear U.D.C.**—20 houses at Deri. E. & S., Council Offices, Hengoed, Glam. Dep. £2.

†***Lincoln (Parts of Kesteven) C.C.**—Pair of police houses at Queen's-walk, Stamford. C. B. Metcalfe (F.), County A., County Offices, Sleaford. Tenders by October 14.

Rye T.C.—Three groups of houses and two-storey flats at Tilling Green estate. E. C. Harris & Partners, FF.R.I.C.S., 3, Bedford-sq., W.C.1. Dep. £2 2s.

Salcombe U.D.C.—One or two blocks of dwellings, comprising one house and two aged persons' flats, at west side of St. Dunstan's-rd. S., Council Offices. Dep. £2 2s.

Sutton Coldfield T.C.—52 houses at site 3E, Falcon Lodge estate. B.S. Dep. £2 2s.

***Wandsworth B.C.**—232 dwellings at Notre Dame estate, Clapham. T.C.

†***Wandsworth B.C.**—One 6-storey and two 3-storey blocks of flats (total 48 flats) at Nutwell-st., Tooting. T.C., Municipal-bldgs.

OCTOBER 1.

Malvern U.D.C.—42 houses at The Knapp site, Beauchamp-rd., Malvern Link. S. and Water E., Council House. Dep. £2 2s.

Salop C.C.—Second instalment of Harlescott Primary School, Shrewsbury. A. G. Chant, County A., 5, Belmont, Shrewsbury. Dep. £2 2s.

Salop Standing Joint Committee.—Pair of police houses with outbuildings at Oakengates. A. G. Chant, County A., 5, Belmont, Shrewsbury. Dep. £1 1s.

Walsall T.C.—8 houses at Chase-rd., 12 Duplex houses at Green Rock; 6 at junction of Well-la. and Goscote-la., 6 at junction of Severn-rd. and Thames-rd., and 16 houses at Talke-rd. B.E. Dep. £3 3s.

OCTOBER 2.

Orpington U.D.C.—Repairs and decorations at 4-22, Viaduct Cottages, High-st., St. Mary Cray. H. E. Morgan, Valuation and Estates Officer, The Priory, Church Hill. Dep. £1 1s.

OCTOBER 4.

Brighton T.C.—44 houses in two contracts at Hollingbury estate. E. & S., 26-30, King's-rd. Dep. £2 2s.

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Colborne U.D.C.—10 houses at Hawthorne-ave. estate, Glazebury. F. Martland, C., Council Offices, Lowton, nr. Warrington. Dep. £2 2s.

†***Somerset C.C.**—Erection (first phase construction) of new junior school, Bath-rd., Bridgwater. R. O. Harris (F.), County A., Park-st., Taunton. Dep. £2 2s.

Wembley T.C.—30 houses at Fryent estate, Kingsbury (contract 3). Boro Treas., Town Hall. Dep. £2 2s.

Wembley T.C.—60 flats at Forty-ave. Boro' Treas. Dep. £2 2s.

OCTOBER 5.

Brighton C.B.—4 shops with flats over at Carden-av., Patcham, and 9 shops with flats over at Moulsecomb-way, Moulsecomb. D. J. Howe, M.I.C.E., M.Inst.Mun.E., 26-30, King's-rd. Dep. £1 1s. each scheme.

***Southend-on-Sea C.B.**—Houses at site No. 5, Eastern-ave. Three pairs type 43C; 5 blocks of four types 11 and 12; 3 blocks of four types 45D and 45E. B.E., Municipal-bldgs. Dep. £2.

OCTOBER 6.

Camelford R.D.C.—2 houses at Saint Teach and 2 at Bossinney-rd., Tintagel. Andrew & Randell, Hepworth-chbrs., St. Austell.

***Eton R.D.C.**—6 pairs of aged persons' bungalows at Harefield-rd., Denham. E. & S., Council Offices, Windsor-rd., Slough. Dep. £3 3s.

Eton R.D.C.—3 pairs of houses at Uxbridge-rd. (Dawes Moor), Wexham. Sir John Brown, A. E. Henson & Partners (FF.), 117, Sloane-st., S.W.1. Dep. £3 3s.

OCTOBER 7.

***Bullingdon R.D.C.**—18 houses at Garsington and 8 at Warborough. Harry W. Smith (F.), 29, George-st., Oxford. Dep. £2 2s.

Burgess Hill U.D.C.—8 houses at West Park estate. E. & S., Council Offices, 32, Church-rd. Dep. £2 2s.

†**Cambridge T.C.**—New infants' and junior school, Newmarket-rd. B.S., Guildhall. Dep. £5 5s.

Stourbridge T.C.—157 houses in 4 groups at Norton estate, Part 1C. B.E. & S. Dep. £3 3s.

OCTOBER 8.

Derby C.B.—One pair of houses at Madeley-st. T. W. East (F.), Boro' A., Council House. Dep. £2 2s.

OCTOBER 9.

Braintree R.D.C.—12 houses at Braintree-rd., Gt. Bardfield. E. & S., St. Peter's-cl., Bocking, Braintree. Dep. £2 2s.

Dorking U.D.C.—36 houses at Flint Hill estate. H. D. Jeffries, C., Council Offices. Dep. £2 2s.

***Mablethorpe and Sutton U.D.C.**—12 houses at Waterloo-rd. R. Vincent Lewis, C., Council Offices. Dep. £2 2s.

OCTOBER 11.

Bucks C.C.—New infants' school at Totteridge-la., High Wycombe. Guy R. Crouch, C., County Hall, Aylesbury. Dep. £5 5s.

Cuckfield R.D.C.—20 dwellings at Albourne. E. & S., Council Offices, Boltro-rd., Haywards Heath. Dep. £2 2s.

Heckmondwike U.D.C.—38 houses at Dale-la. estate. F. A. Brown, S., Oldfield-la. Dep. £2 2s.

***Watford R.D.C.**—10 Airey houses with outbuildings, drainage, etc., at Battlers Green-dr., Willow-way, Radlett. C., Council Offices, Wynyard House, Langley-rd. Dep. £1 1s.

OCTOBER 14.

***Friern Barnet U.D.C.**—30 flats at Colney Hatch-la., N.10. C., Town Hall. Dep. £2 2s.

***Harrow U.D.C.**—56 dwellings at site fronting Weald-la. and Long Elms, Harrow Weald. E. & S., Council Offices, Uxbridge-rd., Stanmore. Dep. £2 2s.

OCTOBER 16.

Littlehampton U.D.C.—28 dwellings at Lyminster-rd. E. & S., Council Offices, Manor House. Dep. £2 2s.

OCTOBER 18.

***Chelmsford T.C.**—36 flats with site works, etc., at Upper Bridge-rd. B.E., S. & Architect. Municipal Offices. Dep. £2 2s.

Pewsey R.D.C.—4 houses at Everleigh with sewers, etc. E. & S., Council Offices. Dep. £2 2s. (by cheque).

OCTOBER 19.

Amble U.D.C.—2 cottages at Links estate. S., Council Offices. Dep. £2 2s.

OCTOBER 20.

***Hatfield R.D.C.**—16 cottages at Birchwood-ave. J. H. Parker (A.), North-pl., 82, Gt. North-rd., Hatfield. Dep. £2 2s.

OCTOBER 22.

***Wellington (Salop) R.D.C.**—20 houses at High Ercall and 20 at Tibberton. Walter B. Bond, F.R.I.C.S., 3, Newhall-st., Birmingham. Dep. £2 2s.

***Weymouth and Melcombe Regis T.C.**—16 houses at Westhaven estate, Abbotsbury-rd. B.E. & S., 6, Pulteney-bldgs. Dep. £2 2s.

NO DATE.

***Coventry T.C.**—400 houses at various estates. D. E. E. Gibson, City A., 1a, Warwick-row. Dep. £3 3s.

ROADS, SEWERAGE AND WATER WORKS

SEPTEMBER 21.

†***Derby C.B.**—Pumping station at Little Eaton. Boro' A. Dep. £2 2s.

SEPTEMBER 25.

Harrogate T.C.—Roads and sewers at Stonefall Park estate. B.E.

SEPTEMBER 27.

Blackwell R.D.C.—Roads and sewers off Doe Hill-la., Tibshelf, Derbys. Architect & Housing Supt., "Dale Close," 100, Chesterfield-rd., South Mansfield, Notts. Dep. £2 2s.

Chatham T.C.—11,150 lin. yds. of surface water sewers from 9 in. to 36 in. dia. and 6,030 lin. yds. of foul water sewers from 6 in. to 24 in. dia., etc. W. H. Radford & Son, Albion-chbrs., King-st., Nottingham. Dep. £5 5s.

Eastern Valleys (Mon.) Joint Sewage Board.—3,417 yds. of stoneware pipe sewers; 6,280 yds. of 12 in., 2,560 yds. of 15 in., 1,132 yds. of 18 in., 2,900 yds. of 21 in. and 2,530 yds. of 24 in. concrete pipe sewers; 240 yds. of 21 in. spun-iron pipe sewers, etc. John Taylor & Sons, Artillery House, Artillery-row, Westminster, S.W.1. Dep. £5 (cheque only).

Harpenden U.D.C.—Roads and sewers at Pickford Hill extension. E. & S., Harpenden Hall. Dep. £2 2s.

Leominster T.C.—Laying of water mains at Ivington and Worcester-rd. B.S. Dep. £2 2s.

Spalding R.D.C.—Sinking of borehole at Deeping St. Nicholas. Silcock & Simpson, 10, Park-row, Leeds 1. Dep. £2.

Walthamstow B.C.—Roads and sewers at Montalt-rd. and Brookfield estates. B.E. & S. Dep. £2 2s.

SEPTEMBER 28.

Marshland R.D.C.—Provision and laying of 2,380 lin. yds. of 6 in. dia., 10,510 lin. yds. of 4 in. dia. and 13,850 lin. yds. of 3 in. dia. asbestos cement water mains, etc., in various parishes. Rofe & Raffety, 3, Victoria-st., S.W.1. Dep. £2 2s.

Thurrock U.D.C.—2½ miles of stoneware and concrete pipe surface water sewers, etc. E. & S. Dep. £3 3s.

SEPTEMBER 29.

Sunderland C.B.—Roads and sewers at Penny well West. B.E., S. & Architect. Dep. £2 2s.

OCTOBER 2.

Brixworth R.D.C.—Roads and sewers at Moulton. S., Council Offices. Dep. £3 3s.

Brixworth R.D.C.—Roads and sewers at Old. S., Council Offices. Dep. £3 3s.

Chapel-en-le-Frith R.D.C.—Roads and sewers at Castleton. Brady & Partington, Market-st. Dep. £2.

Dunmow R.D.C.—Roads and sewers at Little Hallingbury. C., Council House. Dep. £3 3s.

Uttoxeter U.D.C. — Roads, footpaths and sewers, etc., at Bentley House estate. E. & S., Town Hall. Dep. £2 2s.

OCTOBER 4.

Blaby R.D.C.—New pumping main and sewage disposal works for Narborough and Cosby. E., Council Offices, Narborough. Dep. £5 5s.

St. Albans T.C.—Roads and sewers at Townsend-dr. site. City E. & S. Dep. £2 2s.

St. Neots U.D.C.—Compressor House, approx. 200 yds. of 6 in. dia. spun-iron pumping main, etc., re Huntingdon-rd., drainage. John Taylor & Sons, Artillery House, Artillery-row, Westminster, S.W.1. Dep. £5 (cheque only).

OCTOBER 6.

Poole T.C.—Roads and sewers at Darbys-la. B.E. & S. Dep. £2 2s.

OCTOBER 8.

***Eastwood U.D.C.**—Roads and sewers at Church View estate (No. 2 scheme). Cecil Howitt & Partners, architects, St. Andrew's House, Mansfield-rd., Nottingham. Dep. £2 2s. (payable to U.D.C.).

OCTOBER 11.

Cockermouth U.D.C.—Laying of 15,500 yds. of 3 in. to 9 in. dia. mains with service connections and small reservoir and pump room. Waterhouse & Rounthwaite, MM.I.C.E., 165, Westmorland-rd., Newcastle-on-Tyne. Dep. £2 2s.

OCTOBER 22.

***Wellington (Salop) R.D.C.**—Sewerage and sewage disposal at High Ercall. A. H. S. Waters, M.I.C.E., 25, Temple-row, Birmingham, 2. Dep. £3 3s.

OCTOBER 29.

Lleyn R.D.C.—Sewerage and sewage disposal works at Llithpaen. Richards & Dumbleton, Cornwall-bldgs., 45, Newhall-st., Birmingham, 3. Dep. £5 5s.

Lleyn R.D.C.—Sewerage and sewage disposal works at Efail Newydd. Richards & Dumbleton, Cornwall-bldgs., 45, Newhall-st., Birmingham, 3. Dep. £5 5s.

NO DATE.

***Castle Donington R.D.C.**—Roads and sewers at Lockington. McCarthy, Collings & Co., 187, Forest-rd., Coalville. Dep. £2 2s.

GENERAL BUILDING WORK

(LONDON)

Holborn.—OFFICES.—Reconstruction as offices of premises at Cockpit-yard., for B.C. G. Grey Wornum (F.), 39, Devonshire-st., W.1.

Hornsey.—FLATS.—Conversion of 19, Shepherdshill. Architect, C. R. Young, 24, Palace-court, Finchley-rd., N.W.3.

Ilford (Essex).—SHOPS AND FLATS.—(12) proposed by Hilbery Chaplin, Ltd., builders, 170-173, Piccadilly, W.1, at Longwood-gdns.

Kingston.—OFFICES.—British Electricity Authority, Lower Ham-rd., propose offices over canteen at Kingston Generating Station.

Walthamstow.—REBUILDING.—54-56, Pearl-rd. Architects, Chetwood & Son, 33, Fun-st., Waltham Abbey, Essex.

West Ham.—HOUSES.—At Selwyn-rd. Plans by Russell & Jennings, 65, Broadway, Stratford, E.15.

West Ham.—HOUSES.—(28) for B.C. at Paul-st. Plans by Thomas E. North (F.)., 100, West Ham-la.

West Ham.—HOUSES.—S. Charles & Co., 4, Railway Offices, Woodgrange-rd., Forest Gate, E.7, prepared plans for 4 houses and 3 garages at Earlham estate.

West Ham.—HOUSES.—Montague Burton, Ltd., Hudson-rd. Mills, Leeds, 9, to build 2 houses at 19-23, Woodgrange-rd. Staff, arch., N. Martin (A.).

Wood Green.—REBUILDING.—2-4, Parkhurst-rd. and 2-10, Myddleton-rd., N.22. A. Llewellyn Smith & Waters (FF.), 103, Old Brompton-rd., South Kensington, S.W.

(PROVINCIAL)

Bangor (North Wales).—The Very Rev. J. T. Davies, Dean and Canons of the Bangor Cathedral propose tower at £30,000. Plans by Caroe and Partners (F.), 3-5, Great College-st., S.W.1.

Bebington.—M.H. allocated further 50 houses to be erected at Brackenwood estate.

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Blackburn.—H. Breakell and Co., Ltd., Pitt-st., propose factory at Whitebirk-dr. E.C. propose extensions to High School for Girls at Crosshill.

Blackrod.—U.D.C. propose 24 houses and 16 bungalows. Bradshaw Gass and Hope (FF.), 19, Silverwell-st., Bolton.

Bolton.—T.C. approved: Additions to mill at Mill Hill-st., Mill Hill, for Spinning Co., Ltd.; 27 houses at Farnborough-rd., Kermoor-ave. and Stoneyhurst-ave., Astley Bridge, for F. and H. Douglas, builders, Blackburn-rd., Astley Bridge; offices off Springfield-la. for Milled Metals, Ltd.

Brandon and Byshottles U.D.C. secured sanction to build 32 houses at Esh Winning. Plans by S., Council Offices, Brandon, Co. Durham.

Burton-on-Trent.—T.C. propose 154 houses at Manners site, Winshill.

Carlisle.—Additions proposed at Cumberland Infirmary to plans by Frank Waddington (F.), The White Mare Hotel, Beckermet, Cumberland.

Coventry.—Birmingham and Midland Motor Omnibus Co., Ltd., Bearwood, Birmingham, negotiating for site for new garage, canteen, etc.

Coventry.—T.C. propose fire stations at Fletchamstead-highway and Lythall's-la. F. W. Woolworth and Co., Ltd., W.1, propose stores at junction of Precinct and cross-rd.

Denstone (Staffs).—Members of British Legion branch propose hall in conjunction with Victory Hall Cttee.

Dronfield.—Derby E.C. propose county college.

Eastbourne.—Conversion into flats of Park Gates, Dittons-rd. H. Hubbard Ford (A.), 24, Cornfield-rd.

Eastbourne.—Watney Combe Reid and Co., Ltd., Stag Brewery, Westminster, S.W., negotiating for site at Hide-hollow and Langley-rise for licensed premises.

Kippax.—The Rev. C. H. G. Ridley, vicar, and Parochial Council of St. Mary's Parish Church propose works of restoration of church buildings.

Llanystumdwy.—Trustees of Lloyd George Memorial propose memorial college. Plans by Major Clough Williams-Ellis (F). M.T.P.I.

Macclesfield.—T.C. propose 210 houses, 20 shops, community centre, schools, etc., at Ivy-rd. neighbourhood unit. Plans by E. A. Heppenstall (A.), Boro' A., Pear Tree House, Jordangate.

Manchester.—T.C. approved: Additions to works at 12, Raby-st. and Sewerby-st., Moss Side, for Sorenson Bakery Equipment, Ltd., Drake-st., Hulme; additions to bakehouse at 92, Oldham-rd., Miles Platting, for J. Booth, 38, Arbory-ave., Moston; additions to synagogue at Park-pl., Cheetham Hill-rd., for Cttee. of Manchester Congregation of British Jews; warehouse at 1, Great Marlborough-st. for W. Kayley, G. E. Green, architect, 1b, Marsden-st.; shops and house at 34-36, Alexandra-rd., Moss Side, for Trustees of J. B. Dugdale; alterations to Brunswick Inn, 127, Bury New-rd., Strangeways, for B. Cunningham, brewer, Owen-st., Warrington, D. Fazackerley, architect, 20, Ribblesdale-pl., Preston.

Market Drayton.—R.D.C. propose development of Links estate at Hinstock for further 38 houses, 2 shops, parish hall and school. Oxford University Trust propose agricultural houses at Norton Wood Farm.

Middleton.—A. Redfern and Sons, builders, Fields New-rd., Chadderton, propose 10 shops at Mount-rd. and Kirkway-circus.

Northampton.—Joint Ed. Board propose Northampton Grammar School. J. L. Womersley (A.), Guildhall.

North Riding.—C.C. to obtain site at Strensall for police station. J. Catchpole, C.A., County Hall, Northallerton.

Plymouth.—Reconstruction of Milehouse Depot for workshops, etc., for B.C. E. G. Catchpole (A.), Weston Lodge, Seymour-rd., Plymouth.

Retford (Notts).—Woodard Trust (Midlands Division) acquired Ranby House for conversion into preparatory school. Burser, Col. H. H. Story, M.C., 2, College-hill, Shrewsbury.

Rotherham.—T.C. approved: Alterations to Phœnix Brass Works, Greasbrough-rd., for W. N. Baines and Co., Ltd.; additions to works at Effingham-st. for West Riding Motor Co. (Rotherham), Ltd.

Salford.—T.C. approved: Alterations to premises at 197, Broughton-la., Lower Broughton, for office and warehouse for Brierley Hardware, Ltd.; clothing factory at 192, Great Clowes-st., Broughton, for H. Jacobs; factory at Buckingham-st. for S. Walker. T.C. propose flats at Ladywell. Salford and Warrington T.C.s propose joint scheme for school for backward children. E.C. propose extensions to All Souls' R.C. Schools, Weaste-la., Weaste. T.C. to apply to M.H. for sanction to borrow £5,000 for dental clinic and equipment at Encombe-pl., Chapel-st.

Sedgefield.—R.D.C. to build 20 houses for agricultural workers. Plans by S., J. Tarran, Council Offices.

Southport.—T.C. approved rebuilding Ship Inn, Cable-st., for A. E. Powsey.

South Westmorland.—R.D.C. received sanction of M.H. for 50 houses. Tenders to be invited for 12 houses at Milnthorpe, 14 at Kirkby Lonsdale and 24 at selected sites. E. Middleton (A.), 1, Queen-st., Lancaster.

Stockport.—T.C. approved rebuilding and additions to works at Wellington-st and Hopes Carr for Wm. Moss and Sons (Stockport), Ltd. A. Coburn proposes modernisation of restaurant at 31, St. Petersgate.

Stone.—R.D.C. received M.H. allocation for 69 houses.

Stretford.—T.C. propose civic restaurant at Ripon-rd., Selby-rd. and Cathsworth-rd., Lostock, at £6,500.

Sunderland.—T.C. to negotiate with Sunderland and District Building Trades Employers' Association regarding allocation of contracts for 76 houses. J. E. Lewis, 27, Fawcett-st., B.E.

Sunderland.—T.C. Finance Committee approved scheme for new entrance to South Dock on the Wear at £684,250. Plans by Sir William Halcrow.

Sutton Coldfield.—Warwicks E.C. propose secondary school. C. H. Elkins (L.), C.A., Shire Hall, Warwick.

Upholland.—U.D.C. received M.H. allocation for 56 houses at Highgate estate, 10 by private enterprise.

Wellington (Salop).—R.D.C. propose 10 houses at Church Aston, 6 by private enterprise.

Yedingham.—Building Cttee. propose community hall. H. Smith, architect, Burgate-chmbrs., Pickering, Yorks.

TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H.M. Government departments*.

Ashbourne.—50 houses at Park Land site, for U.D.C. Houfton & Kington (L.), Market-pl., Chesterfield: *J. H. Fryer, Ltd., Great Northern-rd., Derby, £71,848.

Ashby-de-la-Zouch.—16 houses with sewage disposal works, water extension and boundary fencing at Newton Burgoland, for R.D.C. V. G. Bott, A.I.A.A., Architect & E., Council Offices, South-st.: *R. S. Jones & Co., Ltd., 2a, Kate-st., Leicester (subject to M.H. approval).

Barrow-in-Furness.—Reconstruction of service garage at Rawlinson-st., for Premier Service Garage Co.: *Russell Bros., Ltd., Waids House-rd., Nelson, Lancs.

Bedford.—Houses, for T.C.: 40 at Harrowden-rd site, *F. J. Berrington, 4, Kennedy-rd., Bedford (8); *Besbuilt, Ltd., 3-5, Harpur-st., Bedford (8); *Haywin, Ltd., Oakley House Estate, Bedford (12); *Warton & Goodship, 8, Union-st., Bedford (12); 50 houses fronting Aylesbury-rd., and Hatfield-cres., *H. C. Janes, Ltd., £62,857.

Bishop Auckland.—Extensions for Silica Co., Ltd., West Hunwick: *G. Stephenson, Chester-st., Bishop Auckland.

Boldon.—30 houses at Whitburn, for U.D.C.: *W. D. Allison, Whitburn.

Canterbury.—40 houses at Spring-la. site, for City Council: ‡J. B. Rose & Co., Folkestone, £50,820.

Chelsea.—Conversion into flats, etc., of 12, Chelsea Embankment. Architects, Wright & Renny, 1-3, Powis-st., Woolwich, S.E.18: *W. Harris, Ltd., Fernhill-st., North Woolwich, E.16.

Chester-le-Street.—70 houses including roads and sewers at South Pelaw, for U.D.C. W. Ridley, S.: *Direct Labour.

Doncaster.—44 houses at Wheatley Park estate, for T.C. Acting Estates S., 15, South Parade, Doncaster: *Frank Haslam, Ltd., Regent-chbrs., Hall Cross, Doncaster, £57,100.

Doncaster.—Alterations and extensions to factory, etc., at Balby Carr Bank, for Briggs Motor Bodies, Ltd., Chequers-la., Dagenham, Essex. Architect, C. Howard Crane, 7, Buckingham-gate, S.W.1: *T. A. Hanson, 54, Jubilee-rd., Doncaster.

Eastbourne.—Alterations and additions to premises at Silverdale-rd., for School of Domestic Economy. Architect, R. D. Elliott, F.I.A.A., 75, St. Andrew's-st., Hertford: *Mark Martin & Sons, Ltd., Meads-st., Eastbourne.

Eastbourne.—18 (Sections 4 and 5) houses at Chatfield/Davis estate, Hampden Park, for T.C. B.E.: *Dorset Building Contractors, Ltd., 11, Compton-ave., Brighton 1. £24,100.

Ely.—New offices, etc., for Great Ouse Catchment Board. Architect, W. E. Doran, M.I.C.E., Elmhurst, Brooklands-av., Cambridge: *Kerridge (Cambridge), Ltd., Sturton-st., Cambridge.

Forest Gate.—Rebuilding factory, etc., at Belton-rd., for Broadway Confectionery Co., Ltd. Architect, E. K. Conyngham, 77, Cecil Park, Pinner, Middx: *Harris & Partners, Ltd., 783, Lea Bridge-rd., Walthamstow, E.17.

Glanford Brigg.—4 houses at Kirton Lindsey and 4 at Hibaldstow, for R.D.C. Buttrick & Buttrick (F. & A.), 43, Oswald-rd., Scunthorpe: 4 at Hibaldstow, *Gilding & Hill, 23, West-st., Winterton, Lincs, £5,157; 4 at Kirton Lindsey, *Lonsdale & Hubbard, Ltd., 2b, Buckingham-av., Scunthorpe, £5,117.

Glasgow.—Atomic Research Laboratories, etc., for Glasgow University Senate. Architects, Basil Spence & Partners (F./A.), 40, Moray-pl., Edinburgh: *Thaw & Campbell, Ltd., 136, Paton-st., Glasgow, E.1.

Hemsworth.—12 pairs of houses at Wakefield-rd. estate, Kingsley, for U.D.C. Pennington, Hustler & Taylor, Ropergate, Pontefract: *Henry Boot & Sons, Ltd., Ecclesall-rd., Sheffield, 11.

Hitchin.—18 houses at Kimpton, for R.D.C. Architect, L. L. Brown (A.). B. S. Ewing, F.R.I.C.S., M.I.Mun.E., E. & S. Quantities by F. C. Tollafield: *H. C. Janes & Co., Ltd., 189, High Town-rd., Luton, Beds (revised tender, £23,155).

Hull.—Temporary classrooms, etc., at Municipal Technical College and College of Art, Queen's Dock estate, for E.C. W. Morris, M.I.C.E., City E.: *Direct Labour (estimated cost, £38,000).

Hull.—(1) 50 houses at Bricknell-av.; and (2) 14 houses at Salthouse-rd.; and 16 at Holderness-rd., for B.C.: (1) *Direct Labour, £73,108; (2) *Spooners, Ltd., 152, Durham-st., Hull, £37,953.

Ilford.—Rebuilding houses, 58-60, Abercorn-gdns., for W.D.C. Architect, G. F. Siegerts, Electric Parade, Seven Kings-rd., Seven Kings, Essex: *G. Holmes & White, Ltd., Oak Lane estate, Ilford, Essex.

Ilford.—Rebuilding 96-98, Brentford-rd., for W.D.C. Gale, Heath & Sneath, architects, 15, New Bridge-st., E.C.4: *Haines & Warwick, Ltd., Brentford-rd., Ilford.

Lewisham.—101 flats in four blocks at Bromley-rd., Catford, for B.C. Architects, Maxwell Fry & Jane Drew (FF.), Boro' A.; M. H. Forward (F.), F.R.I.C.S. Quantity Surveyor: Oswald E. Parratt, F.R.I.C.S.: *Wates, Ltd., 1258-1260, London-rd., Norbury, London, S.W.16, £160,000.

Liverpool.—Kitchen and dining-room extensions to St. Patrick's R.C. school, Fletcher-st., for E.C.: *Morrison & Sons, Ltd., 1, Pearson-st., Wavertree, Liverpool.

L.C.C.—Contracts exceeding £2,500 in value placed by L.C.C. during period ended September 9:—For construction of 383 dwellings at Debden, Essex, W. J. Simms, Sons & Cooke, Ltd.

¶London (Admiralty).—*Rosyth* Dockyard: foundations for building, James Millar & Partners, Ltd., 18, George-st., Edinburgh, 2.

¶London (Air Ministry).—Contracts to the value of £500 or over for week ended September 11:—Glazing roof: Mellowes & Co., Ltd., Sheffield. Building work: John Dyer & Son (W.S.M.), Ltd., Weston-super-Mare.

¶London (M.O.W.).—Contracts placed by M.O.W. during week ended September 4:—

London: Tate Gallery, Millbank, S.W., Installation of restaurant, J. M. (Contractors), Ltd., 127, Terminal House, Grosvenor-gdns., S.W.1; Snowfields, Bermondsey, City installation office, George Parker & Sons, Ltd., 124, Sumner-rd., Peckham, S.E.15. *Bucks*: St. Ethelbert's R.C. School, London-rd., Slough. Temporary classrooms, W. Varney, Ltd., Clewer Hill-rd., Windsor. *Ches*: St. Petersgate R.C. School, Stockport, Hutted accommodation, E. B. Jones & Rawlinson, 6, Leaf-sq., Salford 6. *Durham*: Head Post Office, Durham, Extension of existing premises, George Gradon & Son, Ltd., 57, North-rd., Durham. *East Lothian*: E.V.W Hostel, Macmerry, Alterations and adaptations, J. Crow & Sons, 3, Coates-pl., Edinburgh. *Glam.*: Remploy Factory, Neath, Erection, Higgs & Hill, Ltd., Crown Works, 8th. Lambeth-rd., London. *Hertford*: Hitchin Station Sorting Office, King's-rd., Hitchin, Alterations and additions, M. & F. O. Foster & Co., Ltd., York-rd., Hitchin. *Kent*: Deal, Reconstruction of sea wall, Coastguard Station, Kent & Sussex (Contrs.), Ltd., 109, Station-rd., Sidcup. *Kincardineshire*: North Hill Camp, Laurencekirk, E.V.W. hostel, Wm. Smith & Co., 1, Archdale-st., Stonehaven. *Lanarkshire*: Queen's Park Senior Secondary School, Glasgow, Temporary classrooms, L. K. Mackenzie & Partners, 304, Cathedral-st., Glasgow. *Lancs*: Site 22, R.A.F. Station, Croft, nr. Warrington, Decorations, Chas. A. Critchley (St. Helens), Ltd., 92, Church-st., St. Helens; Fenton & Cawthorne-st., Lancaster, Telephone exchange, Thos. Croft & Sons, Ltd., Holme Slack Works, Blackpool-rd., Preston, Lancs. *Lincolnshire*: Fane School, Stamford, Kitchen and dining-room, Clarke & Belton, St. Paul's-st., Stamford.

Middx: Camrose School, St. David's-dr., Edgware, Temporary school buildings, Walker Symondson, Ltd., Braintree-rd., Ruislip; Evelyn's School, Yiewsley, Uxbridge, Huts, Hainslins, Ltd., Lawrence House, 128, St. Margaret's-rd., Twickenham; Palace of Engineering, Wembley, Petrol station, Percy Bilton, Ltd., Bilton House, Park-st., W.1; N.S.H.C., Capel House Camp, Bullsmoor-la., Enfield, Alterations, W. E. Pearce & Son, Ltd., Home Cottage, High-rd., Edgware; Billet-rd., Staines, Huts, A. & B. Hanson (Southall), Ltd., The Green, Southall, Middlesex. *Monmouthshire*: Willowtown School, Ebbw Vale, Temporary school building, R. W. Moon, Ltd., 13a, Harrow-rd., Newport, Mon. *Renfrewshire*: Boglestone, Port Glasgow, Temporary houses, McKean & Co., 147, West Regent-st., Glasgow, C.2. *Shropshire*: Polish Civilian Hostel, Mawley Hall, Cleobury Mortimer, Adaptations and alterations, J. H. Smith (Kidderminster), Ltd., Station Hill, Kidderminster. *Surrey*: The Mansion, Queen Mary's Hospital, Roehampton, Exterior painting, Fields, Ltd., Chandos House, Palmer-st., S.W.1. *Warwickshire*: Hostel for E.V.W., Bridge End, Warwick, Alterations and adaptations, H. Clarke & Sons, Ltd., Coronation-rd., Coventry. *Wilts*: M/Agriculture & Fisheries, Bellfield House, Trowbridge, Milk testing laboratory, E. Linzey & Sons, The Halve, Trowbridge, Wilts. *Worcs*: M/Agriculture & Fisheries, Honeyfield Airfield, Alterations and adaptations, Kent & Sussex (Contrs.), Ltd., 270, Corporation-st., Birmingham. *Yorks*: Harewood-rd. School, North Elmsall, School kitchen and dining-room, Quibell & Sons, Bentley-rd., Doncaster.

¶London (War Dept.).—Works contracts placed by War Dept. for week ended September 6:—

Essex: Miscellaneous work, Barvis Partners, Brentwood. *Derbys*: Building work, A. Holmes & Sons, Ltd., Derby. *Leics*: Building work, W. G. Herbert, Melton Mowbray. *Oxfordshire*: Site preparation, Walter Llewellyn & Sons, Ltd., London. *Dorset*: Painting work, Rabbets & Wilkes, Bournemouth. *Wilts*: Miscellaneous work, J. T. Parsons & Son, Ltd., Westbury. *Berks*: Painting work, Fields, Ltd., Reading. *Wilts*: Miscellaneous work, Ledleys, of Marlborough, Ltd., Marlborough.

Macclesfield.—30 houses at Ivy-rd. estate, for T.C.: †Hugh Owen & Son, Ltd., Stockport, £40,884 (subject to M.H. approval).

Macclesfield.—Community Centre and Club Institute for St. Edward the Confessor R.C. Church, London-rd. W. C. Brown & C. Taylor (L.), architects, Pear Tree House, Jordangate: *Cooper Bros. & John Clayton, Ltd., Catherine-st., Macclesfield (estimated cost, £25,000).

Manchester.—Rebuilding garage at 59-67, Piercy-st., Ancoats, for Louis C. Edwards & Sons (Manchester), Ltd., 98, Bradford-st., Beswick: *F. Heywood & Co., Ltd., 97, Higher Wood-st., Middleton, nr. Manchester.

Manchester.—Eight houses at Merson-dr., East Didsbury. J. E. Kewell (F.), 7, Market-st., Altrincham: *Hope & Jones, Gateway Estate, Wilmslow-rd., East Didsbury, Manchester 20.

Manchester.—Reinstatement of 81, New Bridge-st., Strangeways, for John Wilkinson & Son, Lever-st.: *M. Cowan, Ltd., 5, Upper Stanley-st., Manchester 1.

Middlesbrough.—Alterations to factory, for General Electric Co., Ltd. Architects, Matkin & Howkins, Barclays Bank-chbrs., Fawcett-st., Sunderland: *F. Shepherd & Son, York.

Newcastle-on-Tyne.—10 houses at Blackett-Ord estate, for City Council. George Kenyon, City A., 18, Cloth-market: *W. H. Oliver (Newcastle), Ltd., West-rd., Newcastle-on-Tyne.

Newport, Salop.—Houses at Avenue-rd. site, for U.D.C. R. C. Bryan (S.), Council Offices, Church-sq.: *Henry Clay & Son.

Oldham.—Office block at Union-st., for North-Western Electricity Board, Grid House, Wilmslow-rd., East Didsbury, Manchester 20: *A

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Oldham.—Office, welfare department and lavatories to works at Hope Mills, Greenacres, for Eli Lees & Co., Ltd.: *William Lees (Oldham), Ltd., Victoria Saw Mills.

Rothbury.—Reconstruction of two cottages at Great Ryle. Architects, Hetherington & Wilson, County-chbrs., Westgate-rd., Newcastle-on-Tyne: *Thomas Muckle & Sons, Rothbury.

Scarborough.—Four houses and six shops at Barrowcliff estate, for T.C. H. V. Overfield, M.Inst.C.E., B.S.: *Mollekin Bros., Maltby, nr. Rotherham, Yorks, £8,080.

Sheffield.—69 flats at Edward-st. site, for T.C. W. George Davies (F.), City A.; *Public Works Dept., 73, Surrey-st., £109,179.

Shepherds Bush.—Rebuilding St. Catherine Coleman Vicarage, Westway, for Church Council. Architect, Robert Atkinson (F.), 13, Manchester-sq., W.1: *Liddelow, Ltd., 36, Watford-rd., Wembley, Middx.

Sheringham.—10 houses with site and drainage work, for U.D.C.: *H. Bullen & Sons, Ltd., Cromer, £12,660.

Shrewsbury.—60 houses at Crowmoor, for T.C. Architect, S. T. Walker (F.), Birmingham. F. R. Dinnis, B.S. Quantities by Silk & Frazier, Birmingham: †Sir Alfred McAlpine & Son, Ltd., Wolverhampton, £81,360.

Stockport.—30 houses at Sterndale-rd., for T.C. W. F. Gardner, M.Inst.C.E., B.S., Town Hall: *F. Marsland, 7, Bullock-st., Stockport, £35,979.

Sunderland.—Erection of houses for T.C. Six at Hill View: *Cowell & Rawling, Newcastle-rd., Sunderland; two at Thorney-cl.: *W. Milburn, Richmond-st., Sunderland.

Sunderland.—24 houses for T.C. J. E. Lewis, B.E., 27, Fawcett-st.: *Direct Labour.

Sunderland.—16 houses at Druridge-av.: *Lane, Fox & Co., Ltd., Alston-cres., Fulwell, Sunderland.

Totton (Notts).—New workshops, canteen, etc., at Marshalling yard, for British Railways (London Midland Region). W. K. Wallace, M.I.C.E., Chief E., The Grove, Watford, Herts: *Edward Wood & Sons, Ltd., Derby.

Tunbridge Wells.—Houses at six sites at Ramslye, for T.C. B.S., Town Hall: *L. K. N. Perryman, 1, Bank-st., Tonbridge, Kent, £34,688 (24); *Herbert Richardson & Sons, Ltd., Market Place-chbrs., Dartford, Kent, £74,541 (50).

Weardale.—Six houses at Westgate, for R.D.C.: *R. Gallacher, Ltd., Blackhill. Negotiations in hand with same firm for erection of further 18 houses at Wolsingham and eight at Stanhope.

West Ham.—Alterations and additions to buildings at West Ham-la., for Queen Mary's Hospital. Architects, Lanchester & Lodge (FF.), 10, Woburn-sq., W.C.1: *John Mowlem & Co., Ltd., Ebury Bridge-rd., S.W.1.

West Ham.—26 houses, Paul-st., for C.B. Thomas E. North (F.), Boro' A. & Planning Officer, 70, West Ham-la., E.15: ‡Myton, Ltd., 7, Warwick House-st., Cockspur-st., S.W.1, £39,715 (subject to M.H. approval).

West Ham.—Additional houses at Keir Hardie estate, for B.C. Thomas E. North (F.), Boro' A. & Planning Officer, 100, West Ham-la.: *T. Bilton, Ltd., 33, Streatham-pl., S.W.2, £51,370.

Wood Green.—Additions and alterations to nurses' home at Wood Green and Southgate Hospital, Bounds Green-rd., for Management Committee. R. Harrison, A.M.I.C.E., architect, Town Hall: *R. F. Peachey & Sons, Ltd., Church-la., N.17.

Worthing.—32 houses at Maybridge estate, section 2, for B.C.: *D. H. Broad, Ltd., 76, Sackville-rd., Worthing, £42,802.

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